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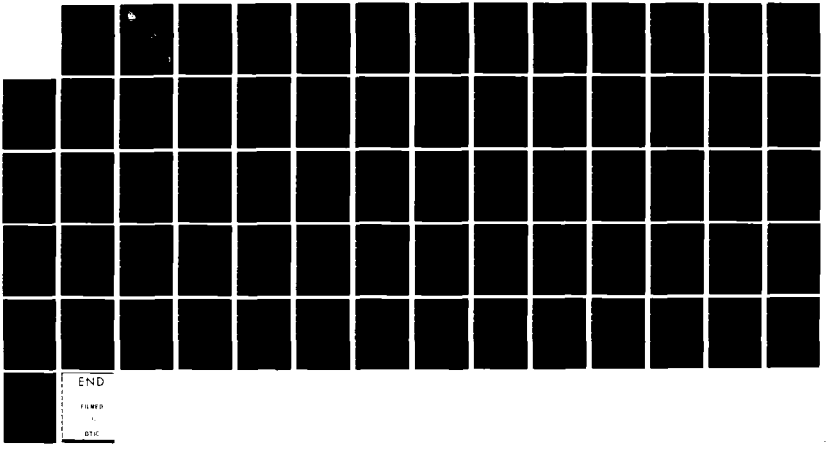

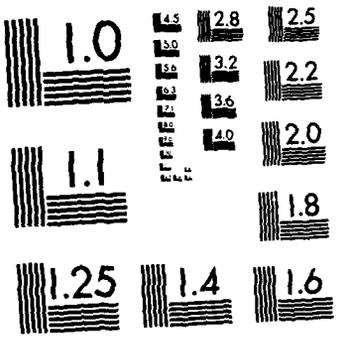

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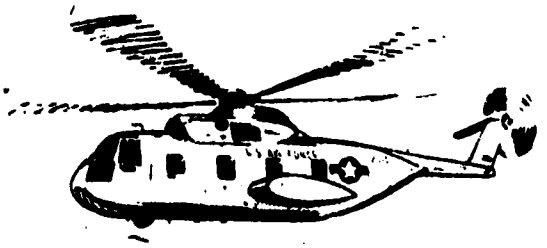
OCCUPATIONAL SURVEY REPORT



FLIGHT ENGINEER (HELICOPTER QUALIFIED)
CAREER LADDER

AFS 113X0B
AFPT 90-113-455
DECEMBER 1982

OCCUPATIONAL ANALYSIS PROGRAM
USAF OCCUPATIONAL MEASUREMENT CENTER
AIR TRAINING COMMAND
RANDOLPH AFB, TEXAS 78150

DISTRIBUTION FOR

AFSC 113X0B OSR AND SUPPORTING DOCUMENTS

	OSR	JOB INV	ANL EXT	TNG EXT
AFHRL/LRT	1	1	1m	1m/1h
AFHRL/MODS	2	6	1m	1m
AFMEA/MEMD	1	1	1h	1
AFMPC/MPCHS	1	1		
AFMPC/MPCRPQ	2			
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HQ TAC/DPAT	3	3		3
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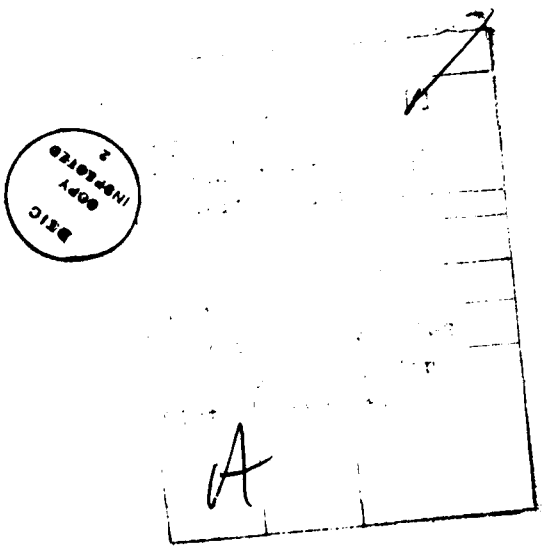

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PREFACE

This report presents the results of a detailed Air Force Occupational Survey of the Flight Engineer (Helicopter Qualified) career ladder (AFS 113X0B). This report was prepared in response to a request by the Director of Training, Deputy Chief of Staff, Operations, HQ SAC. Authority for conducting occupational surveys is contained in AFR 35-2. Computer outputs from which this report was produced are available for use by operating and training officials.

First Lieutenant Kevin F. Morefield, Inventory Development Specialist, developed the survey instrument and Mr Bob Vance and Ms Olga Velez were the CODAP programmers for the project. First Lieutenant Beverly C. Handy, Occupational Analyst, analyzed the data and wrote the final report. This survey has been reviewed and approved by Lieutenant Colonel Jimmy L. Mitchell, Chief, Airman Career Ladders Analysis Section, Occupational Analysis Branch, USAF Occupational Measurement Center.

Copies of this report are distributed to Air Staff sections, major commands, and other interested training and management personnel. Additional copies may be obtained upon request to the USAF Occupational Measurement Center, attention of the Chief, Occupational Analysis Branch (OMY), Randolph AFB, Texas 78150.

PAUL T. RINGENBACH, Col, USAF
Commander
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SUMMARY OF RESULTS

1. Survey Objectives: This occupational survey was conducted as one phase of a broader project to collect current information on career field utilization and training requirements which would help determine the feasibility of a common aircrew technical school training program for enlisted aircrew specialties.

2. Survey Coverage: Job inventory booklets were administered worldwide to 11330B, 11350B, and 11370B airmen. The sample, which included 74 percent of the total personnel assigned to the specialty, was representative of the career ladder as a whole.

3. Specialty Jobs: One major cluster and three independent job types covering all types of missions, training, and supervisory functions were identified by career ladder analysis. Helicopter-qualified flight engineers concentrate the majority of their job time on flight-related functions, with administrative and maintenance duties representing a much smaller percentage of their overall job. Major task differences found between jobs, however, were mostly the result of two factors: additional supervisory duties being acquired as experience increased, or differences in operational responsibilities which were dependent on the type of mission presently flown.

4. Career Ladder Progression: As members progress through the AFSC, they devote greater percentages of their job time to supervisory and training functions. These shifts in responsibilities are very gradual, with increasingly smaller amounts of time spent on common aircrew tasks and preflight, inflight, and postflight functions. The main focus of the job, however, always remains on flight-related technical activities and, even at the sixth enlistment, the majority of time was spent in these areas.

5. AFR 39-1 Specialty Descriptions: The AFR 39-1 Specialty Descriptions provided accurate overviews of the 113X0B AFS.

6. Training Analysis: Both the STS and POI need to be examined in depth to determine if tasks not referenced to STS paragraphs or POI objectives, but performed by substantial percentages of personnel, need to be added to these documents. Additionally, due to the existing overlap in course content of the basic and flight school, both courses need to be evaluated to determine if such redundancy is necessary.

7. Implications: Presently, there appear to be no major problems involving the 113X0B career ladder structure. Job interest and perceived utilization of talents and training characteristically were very high. In view of this, no major changes in classification or training have been recommended. Both STS and POI training documents, although generally well supported, require review.

OCCUPATIONAL SURVEY REPORT
FLIGHT ENGINEER (HELICOPTER QUALIFIED)
(AFS 113X0B)

INTRODUCTION

This is a report of an occupational survey of the Flight Engineer (Helicopter Qualified) career ladder (AFS 113X0B) completed by the Occupational Analysis Branch, USAF Occupational Measurement Center, in December 1982. There has been no previous survey of the 113X0B specialty.

Background

Historically, the 113X0B career ladder had its beginning as of 31 October 1979. Prior to this date, the flight engineer duties they assumed were designated with an aircrew prefix of the 431X0, Helicopter Mechanic, AFS.

The basic job of these individuals as described by AFR 39-1 is to perform visual inspections; operate and monitor engine and aircraft system controls, panels, and indicators; and perform flight duties according to the applicable flight manual checklists. This generally includes assisting in or performing preflight, thru-flight, and postflight inspections; performing nonscheduled maintenance away from home station; computing and applying aircraft weight and balance or aircraft performance data; and monitoring run-up flight operations, and shut-down of engines. The 113X0B personnel are also often required to perform duties as gunner, hoist operator, and cargo sling operator. Career ladder members receive formal training in the basic Helicopter Flight Engineer (H-IN/H-3/H-53) course offered at Sheppard AFB, Texas. This course is six weeks and three days in length. Follow-on flight training is then conducted for all members at Kirtland AFB, New Mexico, and lasts approximately 78 days.

Objective

This survey was requested as one phase of a broader project to assess the feasibility of preliminary undergraduate aircrew technical school training for enlisted aircrew specialties. Major areas discussed in this report include: (1) the development and administration of the survey instrument; (2) the job structure within the AFSC; (3) a comparison of career field responsibilities to AFR 39-1 Specialty Descriptions, the Specialty Training Standard, and current Plan of Instruction (POI); (4) an analysis of the Total Active Federal Military Service (TAFMS) and Duty Air Force Specialty Code (DAFSC) groups; and, (5) the implications of this report. A separate report will be published covering all enlisted aircrew specialties after data has been collected for all the specialties.

SURVEY METHODOLOGY

USAF Job Inventory AFPT 90-113-455 was the data collection instrument constructed for this survey. Initially, the Inventory Development Specialist prepared a tentative task list after reviewing previous Occupational Survey Reports of the 431X0 C/D and 113X0 A/C specialties and pertinent career ladder publications and directives. This new task list was further reviewed and validated through interviews with subject-matter specialists at Sheppard AFB TX, the site of the ground school; Kirtland AFB NM, the site of the flight school; and McClellan AFB CA, the site of the 41 RWRW, an operational unit. Finally, draft inventories were sent to all interviewees and several subject-matter specialists not previously interviewed for final validation. The resulting inventory contained a comprehensive listing of 382 tasks grouped under nine duty headings. Also included was an extensive background section that asked for such information as:

(A) Job Title

(B) Organizational level

(C) Type of flying mission

(D) Aircraft previously qualified in

(E) Aircraft currently qualified in

Survey Administration

From January through May 1982, Consolidated Base Personnel Offices (CBPOs) in operational units worldwide administered the inventory to all job incumbents holding DAFSC 113X0B. Those incumbents were selected from a computer-generated mailing list obtained from personnel data tapes maintained by the Air Force Human Resources Laboratory (AFHRL).

Each respondent who completed an inventory first completed an identification and biographical information section, then checked all tasks performed in their present job. Those tasks checked were then rated on a nine-point scale showing the relative amount of time spent on that task as compared to all other tasks checked. The ratings ranged from one (very small amount of time spent) to nine (very large amount of time spent), with a rating of five representing an average amount of time spent.

Survey Sample

Incumbents were selected to participate in the survey to ensure an accurate representation across major commands (MAJCOMs) and pay grade groups. Table 1 reflects the percentage distribution by major command of the assigned personnel in the AFSC as of April 1982. Also listed in this table is the percent distribution of respondents in the final sample by MAJCOM. The

232 respondents in the final survey sample represented 74 percent of the 113X0B specialty. Table 2 provides a listing of the pay grade group distribution, while Table 3 reflects the sample distribution by TAFMS groups. As demonstrated by these tables, the survey sample provides a good representation of the career ladder population.

TABLE 1

COMMAND REPRESENTATION OF SURVEY SAMPLE

COMMAND	PERCENT OF ASSIGNED	PERCENT OF SAMPLE
MAC	58	64
TAC	20	20
AFSC	10	9
USAFE	5	5
ATC	1	2
OTHER	6	-
TOTAL	100	100

TOTAL ASSIGNED: 314

TOTAL ELIGIBLE FOR SURVEY: 293*

NUMBER OF SURVEYS USED: 232

PERCENT OF CAREER FIELD SAMPLED: 74%

* EXCLUDES PERSONNEL IN PCS STATUS, HOSPITAL, OR LESS THAN SIX WEEKS ON THE JOB

TABLE 2

PAYGRADE DISTRIBUTION OF SURVEY SAMPLE

PAYGRADE	PERCENT OF ASSIGNED	PERCENT OF SAMPLE
AIRMAN	5	5
E-4	11	9
E-5	39	37
E-6	26	30
E-7	19	19

TABLE 3

TAFMS DISTRIBUTION OF 113X0B SAMPLE

	MONTHS TOTAL ACTIVE FEDERAL MILITARY SERVICE					
	1-48	49-96	97-144	145-192	193-240	241+
NUMBER IN SAMPLE	16	51	52	52	44	16
PERCENT OF SAMPLE	7%	22%	22%	22%	19%	7%

Task Factor Administration

Selected senior 113X0B personnel were asked to complete a second booklet (in addition to the job inventory) for either training emphasis (TE) or task difficulty (TD). Information from these booklets was processed separately from the job inventories, and the data was then used in a number of different analyses which will be discussed in greater detail within this report. Table 4 shows the MAJCOM distribution of the TE and TD raters.

Task Difficulty. Each individual completing a task difficulty booklet rated all tasks on a nine-point scale (from extremely low to extremely high) as to the relative difficulty of each task in the inventory. Difficulty is defined as the length of time required for the average incumbent to learn to do the task. Ratings were then adjusted so tasks of average difficulty have a rating of 5.00.

Twenty-seven individuals independently provided the task difficulty information. The interrater reliability (as assessed through components of variance of standard group means) was .93, which indicated high agreement among the raters. The resulting data is a rank ordering of tasks based on the relative degree of difficulty assigned to each task in the inventory.

Job Difficulty Index (JDI). After computing a task difficulty rating for each item, it is then possible to also compute a Job Difficulty Index (JDI) for the job groups identified in the survey analysis. This provides a relative measure of the job difficulty for each functional group reported in the SPECIALTY JOBS section of this report (see Table 8). The number of tasks performed and the average task difficulty per unit time spent are used as the major variables to compute JDI. Consequently, the more time a group spends on difficult tasks, and the greater the number of tasks performed, the higher will be the job difficulty index. This index ranges from one for very easy jobs to 25 for very difficult jobs. The indices are adjusted so the average JDI is 13.00.

Training Emphasis. Individuals completing training emphasis booklets were asked to rate all of the tasks on a ten-point scale which ranged from no training required to extremely heavy training required. These training emphasis ratings indicate where emphasis should be placed on structured training for first-term personnel. Structured training is defined as training provided at resident technical schools, field training detachments (FTD), mobile training teams (MTT), formal OJT, or any other organized training method. Thirty-eight members provided ratings. Interrater reliability (as assessed through the components of variance of standard group means) was .96, which indicated very high agreement among the raters as to which tasks required some form of structured training and which did not. Tasks rated high in training emphasis had ratings of 5.80 and above, while the average rating was 3.66. Tasks with ratings of 1.52 and below could be considered to have received a low training emphasis rating.

When used in conjunction with other factors, such as percent members performing, training emphasis ratings can provide an insight into training requirements. This may help validate the lengthening or shortening of specific units of instruction in various training programs.

TABLE 4

COMMAND REPRESENTATION OF 113X0B

TRAINING EMPHASIS AND TASK DIFFICULTY RATERS

COMMAND	PERCENT OF ASSIGNED	PERCENT OF TRAINING EMPHASIS RATERS	PERCENT OF TASK DIFFICULTY RATERS
MAC	58	60	61
TAC	20	18	21
AFSC	10	15	11
USAFE	5	7	5
ATC	1	-	2
OTHER	6	-	-
TOTAL	100	100	100

SPECIALTY JOBS
(Career Ladder Structure)

The number and character of distinctly different jobs within a career ladder can have a great impact on Air Force personnel classification policy, technical training, and on-the-job training (OJT). Based on the similarity of tasks performed and relative time spent performing those tasks, individuals were sorted into groups that represented similar jobs. This report begins with a detailed description of the types of jobs found within the specialty and a discussion of how these jobs relate to one another.

Specialty Overview

Structure analysis identified four major jobs within the Flight Engineer (Helicopter Qualified) career ladder. Based on similarity of tasks performed and the amount of time spent on each task, the jobs of 113X0B respondents are listed below and diagrammed in Figure 1. (Each job group is given a GRP identification number to cross-reference them to computer printouts included in the statistical summary package provided to selected users. The N listed with these group numbers corresponds to the number of people within the group.)

I. FULL PERFORMANCE FLIGHT ENGINEERS (GRP024, N=201).

- A. H-3, H-53 Support Mission Flight Engineers (GRP084, N=22)
- B. H-3, H-53 Combat Mission Flight Engineers (GRP091, N=49)
- C. H-3, H-53 Aircrew Instructors-Flight Examiners (GRP097, N=25)
- D. H-53 Mid-Air Retrieval System (MARS) Operators (GRP117, N=5)
- E. Executive Support Mission Flight Engineers (GRP081, N=6)
- F. H-3 Tactical Air Support Flight Engineers (GRP053, N=8)
- G. H-1 NCOIC-Aircrew Instructors (GRP055, N=23)
- H. H-1 Flight Examiners (GRP039, N=6)
- I. H-1 Combat Mission Flight Engineers (GRP036, N=22)

II. H-1 SUPPORT MISSION FLIGHT ENGINEERS (GRP012, N=8)

III. H-3 MID-AIR RETRIEVAL SYSTEM (MARS) OPERATORS (GRP013, N=5)

IV. STAFF MANAGERS (GRP016, N=7)

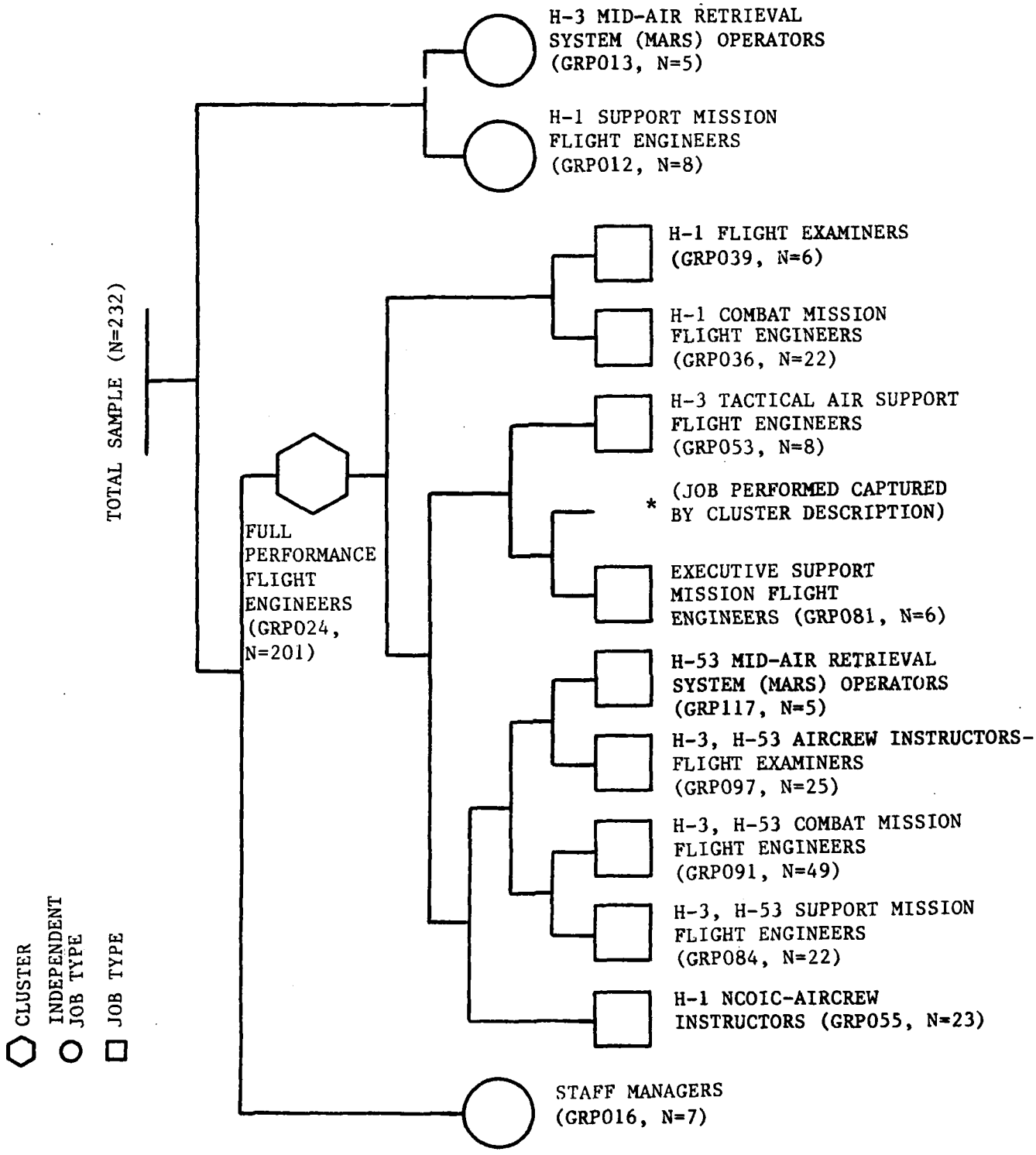
Respondents forming these clusters and independent job types accounted for 96 percent of the total survey sample. The remaining four percent of the sample consisted of individuals whose jobs did not group into any of the categories outlined above.

In general, the basic technical duties performed by flight engineers are essentially the same across the entire career ladder. As a result, a very large core of general tasks was found to be common among all identified specialty jobs. More specifically, as Table 5 illustrates, two duties, Performing Common Aircrew Tasks (Duty F) and Performing Preflight, Inflight,

FIGURE 1

FLIGHT ENGINEER (HELICOPTER QUALIFIED) CAREER LADDER

(AFSC 113X0B)



and Postflight Functions (Duty G), accounted for a high degree of overlap between all of the functional groups in terms of the relative amounts of time spent on particular job areas. Basically, most differences found between job groups seem to be primarily a function of two major factors: (1) the relative experience levels of the individuals, and (2) the type of mission presently flown. Additionally, because of greater system similarity, respondents working with the H-3 and H-53 tended to group together, while H-1 flight engineers were often more distinct. More experienced incumbents assumed additional supervisory duties in such jobs as NCOIC, Flight Examiner, and Aircrew Instructor. On the contrary, many of the less experienced members were often found in groups which performed fewer maintenance tasks away from the home station. Correspondingly, the second major factor, the type of mission flown, created operational differences between jobs by requiring some individuals to perform as a hoist operator, gunner, or cargo sling operator. The main emphasis of the job performed by nearly all groups, however, commonly focused primarily on flight-related activities.

Job Structure

The following paragraphs contain brief descriptions of the major job classifications and the variations found within them. Selected background data and duty information is provided in Tables 5 through 8 for each of these groups.

I. FULL PERFORMANCE FLIGHT ENGINEERS (GRP024, N=201). Comprising approximately 87 percent of the sample, the members of this cluster perform jobs which are the most representative of the helicopter flight engineer specialty overall. In general, their responsibilities primarily consisted of operating and monitoring system control devices and indicators, performing visual inspections, and computing balance, performance, and weight data. Two major functions: performing common aircrew tasks, and performing preflight, inflight, and postflight functions, accounted for over 60 percent of this group's relative job time. Depending on the primary mission performed, though, the relative amount of time devoted to supervisory, maintenance, and operational functions, varied among groups within this cluster. Tasks commonly performed by these airmen include:

reviewing AFTO Form 781 series for aircraft discrepancies
securing equipment for descent or landing
monitoring radio communication transmissions
instructing extra crew members or passengers on inflight or ground emergency procedures
performing aircrew observer or scanner duties
computing routine take off data for Takeoff and Landing Data (TOLD) cards
computing routine landing data for Takeoff and Landing Data (TOLD) cards
computing remote site operation (RSO) data for Takeoff and Landing Data (TOLD) cards

operating hoisting equipment
determining landing zone factors (remote site operation)

Echoing the current status of the 113X0B career ladder, these respondents tended to be fairly senior in grade (average paygrade of E-6), and more than half of them held the 7-skill level (see Table 6). Additionally, although most incumbents were flying on only one aircraft, respondents working with the H-3, and those working with the H-53, tended to group together because of system similarities. Of the groups within this cluster, some (approximately five percent of the cluster) performed jobs so similar to this description that a more detailed presentation would essentially be redundant. Other groups, however, performed jobs distinct enough not to be fully covered by the overall cluster description, and are therefore discussed further in the following paragraphs.

A. H-3, H-53 Support Mission Flight Engineers (GRP084, N=22). Members of this group reported flying a variety of missions, including air training and test, and down range support. As a result, most incumbents were involved in such functions as working with pyrotechnics and performing hoist equipment and cargo sling operator tasks. In addition to those functions which were characteristic of the cluster, as a whole, tasks performed by this group include:

deploying pyrotechnics
operating hoisting equipment
performing cargo sling operational checks
performing hoisting equipment operational checks
preparing cargo sling for loading or offloading
loading or offloading pyrotechnics
performing or simulating search and rescue (SAR) procedures

B. H-3, H-53 Combat Mission Flight Engineers (GRP091, N=49). These individuals represented the largest single job group within the sample and, on the average, performed a slightly greater number of tasks than their counterparts flying support missions (193 versus 161). In addition to working with pyrotechnics, cargo slings, and hoisting equipment like the preceding group, these airmen were differentiated from support mission personnel by being involved in such activities as performing as gunners, performing insertion and extraction operation duties, and performing simulated combat maneuvers. They devote nearly twice as much of their relative job time to operational functions than non-combat H-3, H-53 personnel (see Table 5). Tasks characteristic of these incumbents included:

arming weapons
firing weapons systems
loading or offloading ammunition
operating hover coupler or trim control systems

operating inflight tracking equipment
performing insertion or extraction operation duties
performing paradrop procedures
performing simulated combat maneuvers
performing static line or high altitude low opening (HALO) paradrop procedures
performing or simulating search and rescue (SAR) procedures

The two most common types of missions flown by airmen in this group were air rescue and recovery, and special operations. Compared to respondents in the support role, these individuals generally were more senior in grade (E-6 versus E-5) and had a slightly greater average number of months in the career field (79 versus 72).

C. H-3, H-53 Aircrew Instructors-Flight Examiners (GRP097, N=25). Airmen in this group maintain the greatest range of responsibility of all H-3/H-53 personnel within the sample. In addition to performing the full scope of flight engineer functions common among members of the cluster, the job of these individuals also included tasks related to either training, or standards and evaluation duties. In conjunction, many respondents also reported serving as superintendent or NCOIC of the flight engineer section. Because of these multiple responsiblities, members of this group performed the greatest average number of tasks of any job type identified within the sample (264). Distinguishing tasks included:

establishing performance standards for subordinates
supervising flight engineer technicians (AFSC 11370B)
updating contingency plans
evaluating compliance with performance standards
evaluating compliance with aircraft operation or movement regulations
writing staff studies, surveys, or special reports
advising unit or staff personnel on training matters
conducting tactical training
conducting transition training
establishing unit training standards
writing training reports
completing certificate of aircrew qualification forms (AF Form 8) or Flight Engineer evaluation forms

With an average of 195 months TAFMS and 135 months in the career field, these airmen were members of the most senior and most experienced group found within the sample. Not unexpectedly, nearly all members (92 percent) held the 11370B DAFSC.

D. H-53 Mid-Air Retrieval System (MARS) Operators (GRP117, N=5). This small group, comprising only two percent of the sample, was one of only two groups identified in which drone recovery was the primary type

of mission flown. Because these personnel were also fairly senior (195 months TAFMS), supervisory and managerial activities were among their responsibilities. Typical tasks performed by group members include:

evaluating engineering change proposals (ECP)
indorsing airman performance reports (APR)
supervising flight engineer specialists (AFSC 11350B)
performing hot refueling operation duties
performing mid-air retrieval system (MARS) operational checks
performing mid-air retrieval system (MARS) retrievals
inspecting AGE for serviceability
performing cargo sling operational checks

The majority of these members (60 percent) held the 7-skill level and performed the second largest average number of tasks (210).

E. Executive Support Mission Flight Engineers (GRP081, N=6). A unique aspect of this group is that the majority of members held current qualifications in both the H-1 and the H-3 aircraft. In most of the other identified job types, although there were single individuals who reported holding current qualifications in multiple aircraft, the majority of personnel held only one (see Table 6). Because of the nature of the mission performed, respondents flying executive support spent the least amount of time of any group on operational functions, and, unlike most other 113X0B incumbents, were not typically required to work with hoisting equipment, cargo slings, or weapons sytems. As a result, a greater proportion of job time (85 percent) was devoted to the two most commonly performed flight engineer functions: performing preflight, inflight, and postflight functions (Duty G), and performing common aircrew tasks (Duty F). Similar to the overall cluster description, typical tasks include:

monitoring radio communication transmissions
opening or closing crew entrance doors
operating ultra high frequency (UHF) radios
loading or offloading personnel
instructing extra crew members or passengers on inflight or ground emergency procedures
demonstrating to passengers the proper use of life preservers, parachutes, or oxygen masks
determining fuel required for flights

All six members of this group were assigned to the First Helicopter Squadron at Andrews AFB, Washington DC.

F. H-3 Tactical Air Support Flight Engineers (GRP053, N=8). Similar to the H-3, H-53 Combat Mission Flight Engineers, these individuals were involved with such functions as performing simulated combat maneuvers,

performing insertion and extraction operation duties, and performing paradrop procedures. Unlike the previously mentioned group, though, respondents in this job type were not required to work with pyrotechnics or perform as gunner. Tasks representative of their responsibilities include:

fastening or releasing cargo nets on slings
operating hoisting equipment
performing insertion or extraction operation duties
performing or simulating search and rescue (SAR) procedures
performing paradrop procedures
performing simulated combat maneuvers
performing static line or high altitude low opening (HALO) paradrop procedures
preparing cargo sling for loading or offloading

With an average of 96 months TAFMS and 27 months in the career field, these airmen were relatively junior. Seven of the eight members of this group were assigned to the 703 TASS at Shaw AFB, and represented Tactical Air Command resources.

G. H-1 NCOIC-Aircrew Instructors (GRP055, N=23). These individuals maintained a very broad range of responsibilities and performed the greatest average number of tasks (193) of any group of H-1 flight engineers within the sample. In addition to the full range of common flight engineer functions, members of this group also devoted time to a large number of supervisory, managerial, and training-related activities. Typical tasks performed by these respondents included:

coordinating maintenance requirements with maintenance section or crew chief
determining requirements for space, personnel, equipment, or supplies
scheduling leaves or passes
scheduling personnel for schools, temporary duty (TDY) assignments, or nontechnical training
supervising flight engineer specialists (11350B)
preparing APRs
conducting job proficiency training
conducting OJT
conducting or participating in training conferences
conducting requalification training
conducting tactical training
conducting transition training

As the nature of the job would indicate, with an average of 61 months in the career field, this group was comprised of the most experienced H-1 personnel in the sample.

H. H-1 Flight Examiners (GRP039, N=6). Like the NCOIC-Aircrew Instructors, tasks performed by this relatively senior group of H-1 personnel included common flight engineer functions as well as flight examiner related activities. Because the majority (83 percent) of these respondents also supervised, managerial and supervisory tasks were among their responsibilities. Members of this group performed such tasks as:

supervising flight engineer technicians
completing certificate of aircrew qualification forms (AF Form 8) or flight engineer evaluation forms
assigning personnel to duty positions
assigning sponsors for newly assigned personnel
coordinating supply requests with supply activities

Although these individuals spend the greatest relative amount of job time performing operational functions (22 percent) of any group within the sample, they also devoted the smallest amount of relative time of any group in the cluster to performing maintenance away from the home station (see Table 5). Consequently, as a group, these respondents performed only a limited number of tasks involved with servicing aircraft.

I. H-1 Combat Mission Flight Engineers (GRP036, N=22). Members of this group perform a very similar job to the H-3, H-53 Combat Mission Flight Engineers (IB above). Basically due to aircraft differences, however, H-1 personnel were required to devote a slightly smaller percentage of their time to performing preflight, inflight, and postflight functions. Overall, tasks typically performed include:

arming weapons
firing weapons systems
deploying pyrotechnics
performing insertion or extraction operation duties
performing or simulating search and rescue (SAR) procedures
performing paradrop procedures
performing simulated combat manuevers

With an average of 21 months in the career field, these individuals comprised the least experienced group within the sample.

II. H-1 SUPPORT MISSION FLIGHT ENGINEERS (GRP012, N=8). Members of this group, representing only a small percentage of the total sample (approximately 3 percent), performed a job very limited in scope. The overall job performed by these individuals consisted of an average of 78 tasks, compared to an average of 178 for members of the cluster as a whole. The great difference between the number of tasks performed by these respondents, as contrasted to the cluster members, is basically accounted for

by the fact that fewer computational and equipment monitoring or operating tasks are performed. Airmen in this group reported flying a variety of different support-oriented missions. These included weapons wing support, water survival school support, and executive support (overseas). As a result, unlike many 113X0B personnel, most respondents were not required to perform as gunner, hoist equipment operator, or search and rescue procedures. Overall, compared to their H-1 Combat Mission counterparts, approximately half as much time was devoted to operational functions. These incumbents, however, spent the greatest percentage of their relative job time on helicopter maintenance duties of any group identified within the sample. Common tasks performed include:

deploying pyrotechnics
loading or offloading pyrotechnics
performing cargo sling operational checks
preparing cargo sling for loading or offloading
loading or offloading personnel

Group personnel were fairly junior with an average of 99 months in the service (TAFMS) and 32 months in the career field. Incumbents in this independent job type reported an average paygrade of E-5, with 88 percent of the individuals holding the 5-skill level DAFSC.

III. H-3 MID-AIR RETRIEVAL SYSTEM (MARS) OPERATORS (GRP013, N=5). This independent job type, which represented approximately two percent of the sample, was the second group identified in which drone recovery was the primary mission flown. Unlike their counterparts in the H-53, these airmen were, on the average, much more junior (110 months versus 173 months TAFMS) and slightly less experienced (51 months in the career field versus 78 months). Consequently, the responsiblities of members in this group were much narrower, and in fact, these respondents performed the least number of tasks (67) of any group within the sample. In contrast to the 113X0B personnel in the Full Performance cluster, these incumbents performed very little helicopter maintenance, performed relatively few operational functions, and similar to the other independent job type, performed an overall smaller number of computational and equipment monitoring or operating tasks. Typical tasks performed by group members include:

performing mid-air retrieval system (MARS) retrievals
performing or simulating search and rescue (SAR) procedures
making entries on AFTO Form 781 Series forms
monitoring fuel flow consumption or transfer
verifying LG safety pins are installed after flights
verifying LG safety pins are removed prior to flights
advising pilot of weight and balance status

The average paygrade for these incumbents was E-5, and all were assigned to the Military Air Command.

IV. STAFF MANAGERS (GRP016, N=7). Performing the most unique job of any group within the sample, these individuals comprised the only identified group in which the overall emphasis of the job was not primarily on flying-related functions. Reporting such job titles as Program Manager, Resource Manager, and Assistant Flight Chief, members of this independent job type devoted nearly half of their job time (47 percent) to administrative, supervisory, and managerial related tasks. Similar to all other job groups within the sample, these airmen still maintained flying responsibilities. Consequently, as expected, the other 53 percent of their time was divided among these areas. Tasks uniquely performed by these respondents included:

coordinating flight engineer conferences with other organizations
drafting budget or financial requirements
establishing publications libraries
planning layout of facilities
preparing job descriptions
conducting staff assistance visits
coordinating flight operations with ramp coordinators
evaluating budget or financial requirements
investigating mishaps or incidents

With the exception of the H-3, H-53 Aircrew Instructors-Flight Examiners, with 185 months in service and 113 months in the career field, these respondents comprised the most senior group of individuals found within the sample.

Comparison of Jobs Within the Specialty

In addition to describing each job group within a specialty, it is often useful to contrast the groups to highlight their differences. A series of tables have been constructed to display a number of differences in 113X0B jobs.

The Job Difficulty for each group identified within the specialty is presented in Table 8; overall, the range of variability was very wide in terms of the relative degree of difficulty of each of the jobs performed. The H-3, H-53 Aircrew Instructors-Flight Examiners, who performed an average of 264 tasks had the highest JDI (18.6), while the H-3 Mid-Air Retrieval System (MARS) operators, who performed an average of only 67 tasks, had the lowest (3.2). Such variation is a reflection of the differences between the responsibilities of respondents in each of the job types and independent job types.

In general, there was a core of basic tasks performed in common by all identified groups. Consequently, variations in jobs occurred primarily because different mission requirements necessitated different combinations of operational, managerial, and maintenance-related activities in addition to the common core. Incumbents performing supervisory functions had the highest job difficulty due to the large number of tasks performed. They usually performed the fullest range of technical (flight-related) tasks in addition to their managerial and training responsibilities.

By comparison, those groups having the lowest JDI ratings usually were relatively junior and had a more support-oriented role. Three groups: the H-3 Tactical Air Support Flight Engineers, the H-1 Support Mission Flight Engineers, and the H-3 Mid-Air Retrieval System Operators, fell within this category. These respondents performed an overall smaller number of tasks, and had jobs slightly more limited in scope.

The various job groups displayed very few differences in their attitudes about their jobs. Although only 50 percent of the members of the H-1 Flight Examiners job type found their job interesting (see Table 7), the majority of individuals in all identified groups felt their job was interesting and their talents and training were well utilized. Reenlistment intent was also very positive among all specialty jobs.

Summary

As shown by this career ladder analysis, survey respondents usually performed jobs involving a large number of tasks which are common across the 113X0B career ladder. Essentially, most of the variability in specialty jobs was a function of the comparative experience levels of group members (and the resultant additional supervisory responsiblities) and the type of mission that was flown. Flight-related activities, however, accounted for a very large percentage of relative time on the job for all groups, and only four percent of the sample indicated they presently were in positions not requiring them to fly.

Finally, job satisfaction was found to be characteristically high for most individuals in the field.

TABLE 5

RELATIVE PERCENTAGE OF TIME SPENT ON DUTIES BY FUNCTIONAL JOB GROUPS

DUTIES	FULL PERFORMANCE FLIGHT ENGINEERS CLUSTER (GRP024)	FULL PERFORMANCE FLIGHT ENGINEERS CLUSTER: H-3, H-53 SUPPORT MISSION FLIGHT ENGINEERS (GRP084)	H-3, H-53 COMBAT MISSION FLIGHT ENGINEERS (GRP091)	H-3, H-53 AIRCREW INSTRUCTORS-FLIGHT EXAMINERS (GRP097)	H-53 MID-AIR RETRIEVAL SYSTEM (MARS) OPERATORS (GRP117)	EXECUTIVE SUPPORT MISSION FLIGHT ENGINEERS (GRP081)	H-3 TACTICAL AIR SUPPORT FLIGHT ENGINEERS (GRP053)
A PLANNING AND ORGANIZING	2	1	2	6	4	1	1
B DIRECTING AND IMPLEMENTING	5	3	3	7	7	1	3
C INSPECTING AND EVALUATING	3	1	1	6	4	1	1
D TRAINING	4	1	3	8	7	1	2
E PERFORMING ADMINISTRATIVE FUNCTIONS	2	1	1	2	2	1	2
F PERFORMING COMMON AIRCREW TASKS	20	22	18	16	19	28	25
G PERFORMING PREFLIGHT, INFLIGHT, AND POSTFLIGHT FUNCTIONS	42	55	47	36	39	57	49
H PERFORMING OPERATIONAL FUNCTIONS	15	10	18	12	7	3	9
I PERFORMING HELICOPTER MAINTENANCE DUTIES (AWAY FROM HOME STATION)	7	6	7	7	11	7	8

TABLE 5 (CONT)

DUTIES	FULL PERFORMANCE F.E. CLUSTER					
	H-1 NCOIC-AIRCREW INSTRUCTORS (GRP055)	H-1 FLIGHT EXAMINERS (GRP039)	H-1 COMBAT MISSION FLIGHT ENGINEERS (GRP036)	H-1 SUPPORT MISSION FLIGHT ENGINEERS (GRP012)	H-3 MID-AIR RETRIEVAL SYSTEM (MARS) OPERATORS (GRP013)	STAFF MANAGERS (GRP016)
A PLANNING AND ORGANIZING	4	7	1	3	1	10
B DIRECTING AND IMPLEMENTING	7	8	2	5	1	14
C INSPECTING AND EVALUATING	5	4	2	2	1	11
D TRAINING	7	6	3	2	1	9
E PERFORMING ADMINISTRATIVE FUNCTIONS	2	3	1	2	1	3
F PERFORMING COMMON AIRCREW TASKS	19	21	24	27	31	14
G PERFORMING PREFLIGHT, INFLIGHT, AND POSTFLIGHT FUNCTIONS	30	25	37	33	51	23
H PERFORMING OPERATIONAL FUNCTIONS	16	22	21	12	11	7
I PERFORMING HELICOPTER MAINTENANCE DUTIES (AWAY FROM HOME STATION)	10	4	9	14	2	9

TABLE 6

BACKGROUND DATA FOR FUNCTIONAL JOB GROUPS

		FULL PERFORMANCE FLIGHT ENGINEERS CLUSTER					
	FULL PERFORMANCE FLIGHT ENGINEERS CLUSTER (GRP024)	H-3, H-53 SUPPORT MISSION FLIGHT ENGINEERS (GRP084)	H-3, H-53 COMBAT MISSION FLIGHT ENGINEERS (GRP091)	H-3, H-53 AIRCREW INSTRUCTORS-FLIGHT EXAMINERS (GRP097)	H-53 MID-AIR RETRIEVAL SYSTEM (MARS) OPERATORS (GRP117)	EXECUTIVE SUPPORT MISSION FLIGHT ENGINEERS (GRP081)	H-3 TACTICAL AIR SUPPORT FLIGHT ENGINEERS (GRP053)
NUMBER IN GROUP:	201	22	49	25	5	6	8
PERCENT OF SAMPLE:	87%	9%	21%	11%	27%	3%	3%
PERCENT LOCATED OVERSEAS:	26%	36%	39%	40%	20%	-	-
DAFSC DISTRIBUTION:							
11330B	5%	9%	2%	-	-	-	25%
11350B	44%	50%	53%	4%	40%	67%	50%
11370B	51%	41%	45%	92%	60%	33%	25%
AVERAGE GRADE:	E-6	E-5	E-6	E-6	E-6	E-6	E-5
AVERAGE MONTHS IN CAREER FIELD:	74	72	79	135	78	65	27
AVERAGE MONTHS IN SERVICE (TAFMS):	142	115	138	195	173	159	96
PERCENT IN FIRST ENLISTMENT:	7%	18%	4%	-	-	-	13%
PERCENT MEMBERS SUPERVISING:	34%	14%	22%	48%	100%	50%	50%
AVERAGE NUMBER DIRECTLY SUPERVISED:	1	-	-	2	3	1	1
AVERAGE NUMBER OF TASKS PERFORMED:	178	161	193	264	210	122	120
JOB DIFFICULTY INDEX (JDI):	13.7	11.7	14.8	18.6	15.7	7.6	8.0
AIRCRAFT HOLD CURRENT QUALIFICATION:							
H-1	38%	14%	6%	4%	-	100%	-
H-3	33%	46%	51%	36%	20%	83%	100%
H-53	38%	54%	55%	64%	100%	-	-
MAJCOM:							
ATC	-	-	-	-	-	-	-
TAC	20%	-	20%	12%	-	-	100%
USAFE	6%	14%	-	4%	40%	-	-
AFSC	10%	36%	-	12%	60%	-	-
MAC	64%	50%	80%	72%	-	100%	-

TABLE 6 (CONT)

	FULL PERFORMANCE F.E. CLUSTER					
	H-1 NCOIC-AIRCREW INSTRUCTORS (GRP055)	H-1 FLIGHT EXAMINERS (GRP039)	H-1 COMBAT MISSION FLIGHT ENGINEERS (GRP036)	H-1 SUPPORT MISSION FLIGHT ENGINEERS (GRP012)	H-3 MID-AIR RETRIEVAL SYSTEM (MARS) OPERATORS (GRP013)	STAFF MANAGERS (GRP016)
NUMBER IN GROUP:	23	6	22	8	5	7
PERCENT OF SAMPLE:	10%	3%	9%	3%	2%	3%
PERCENT LOCATED OVERSEAS:	22%	-	18%	50%	-	43%
DAFSC DISTRIBUTION						
11330B	-	-	-	-	40%	-
11350B	30%	17%	77%	80%	40%	43%
11370B	70%	83%	23%	13%	20%	57%
AVERAGE GRADE:	E-6	E-6	E-5	E-5	E-5	E-6
AVERAGE MONTHS IN CAREER FIELD:	61	48	21	32	51	113
AVERAGE MONTHS IN SERVICE (TAFMS):	157	176	98	99	110	185
PERCENT IN FIRST ENLISTMENT:	4	-	14%	13%	20%	-
PERCENT MEMBERS SUPERVISING:	65%	83%	23%	13%	-	57%
AVERAGE NUMBER DIRECTLY SUPERVISED:	2	3	-	-	-	2
AVERAGE NUMBER OF TASKS PERFORMED:	193	127	127	78	67	195
JOB DIFFICULTY INDEX (JDI):	16.1	12.5	11.0	5.6	3.2	17.8
AIRCRAFT HOLD CURRENT QUALIFICATION:						
H-1	100%	100%	100%	100%	40%	71%
H-3	-	-	-	-	100%	43%
H-53	-	-	-	-	-	14%
MAJCOM:						
ATC	-	-	-	-	-	-
TAC	22%	0	32%	50%	-	29
USAFE	4%	-	-	-	-	-
AFSC	-	-	-	-	-	-
MAC	74%	100%	68%	50%	100%	71%

TABLE 7

JOB SATISFACTION DATA FOR CAREER LADDER JOB GROUPS
(PERCENT MEMBERS RESPONDING)

		FULL PERFORMANCE FLIGHT ENGINEERS CLUSTER					
	FULL PERFORMANCE FLIGHT ENGINEERS CLUSTER (GRP024)	H-3, H-53 SUPPORT MISSION FLIGHT ENGINEERS (GRP084)	H-3, H-53 COMBAT MISSION FLIGHT ENGINEERS (GRP091)	H-3, H-53 AIRCREW INSTRUCTORS-FLIGHT EXAMINERS (GRP097)	H-53 MID-AIR RETRIEVAL SYSTEM (MARS) OPERATORS (GRP117)	EXECUTIVE SUPPORT MISSION FLIGHT ENGINEERS (GRP081)	H-3 TACTICAL AIR SUPPORT FLIGHT ENGINEERS (GRP053)
HOW DO YOU FIND YOUR JOB:							
DULL	5	-	4	-	-	17	12
SO-SO	5	5	-	-	-	-	25
INTERESTING	89	91	96	96	100	83	63
NO RESPONSE	1	4	-	4	-	-	-
MY JOB UTILIZES MY TALENTS:							
NOT AT ALL TO VERY LITTLE	9	-	6	4	20	17	25
FAIRLY WELL OR BETTER	91	100	94	92	80	73	75
NO RESPONSE	-	-	-	4	-	-	-
MY JOB UTILIZES MY TRAINING:							
NOT AT ALL TO VERY LITTLE	8	5	6	-	-	17	25
FAIRLY WELL OR BETTER	92	95	94	100	100	73	75
NO RESPONSE	-	-	-	-	-	-	-
I PLAN TO REENLIST:							
I WILL RETIRE	11	9	12	20	-	17	-
NO OR PROBABLY NO	10	9	6	4	20	-	12
YES OR PROBABLY YES	78	77	82	72	80	83	88
NO RESPONSE	1	5	-	4	-	-	-

TABLE 7 (CONT)

	FULL PERFORMANCE F.E. CLUSTER					
	H-1 NCOIC-AIRCREW INSTRUCTORS (GRP055)	H-1 FLIGHT EXAMINERS (GRP039)	H-1 COMBAT MISSION FLIGHT ENGINEERS (GRP036)	H-1 SUPPORT MISSION FLIGHT ENGINEERS (GRP012)	H-3 MID-AIR RETRIEVAL SYSTEM (MARS) OPERATORS (GRP013)	STAFF MANAGERS (GRP016)
HOW DO YOU FIND YOUR JOB:						
DULL	13	17	-	12	-	-
SO-SO	9	33	4	13	-	29
INTERESTING	78	50	96	75	100	71
NO RESPONSE	-	-	-	-	-	-
MY JOB UTILIZES MY TALENTS:						
NOT AT ALL TO VERY LITTLE	22	17	4	25	-	14
FAIRLY WELL OR BETTER	78	83	96	75	100	86
NO RESPONSE	-	-	-	-	-	-
MY JOB UTILIZES MY TRAINING:						
NOT AT ALL TO VERY LITTLE	26	17	-	25	-	14
FAIRLY WELL OR BETTER	74	83	100	75	100	86
NO RESPONSE	-	-	-	-	-	-
I PLAN TO REENLIST:						
I WILL RETIRE	9	-	4	-	-	14
NO OR PROBABLY NO	17	33	14	-	20	-
YES OR PROBABLY YES	74	67	82	100	60	86
NO RESPONSE	-	-	-	-	20	-

TABLE 8

JOB DIFFICULTY INDICES FOR CAREER LADDER GROUPS

GROUP	ATDPUTS*	NUMBER OF TASKS PERFORMED	JOB DIFFICULTY INDEX
STAFF MANAGERS (GRP016)	5.0	195	17.8
FULL PERFORMANCE FLIGHT ENGINEERS (GRP024)	4.7	178	13.7
H-3, H-53 AIRCREW INSTRUCTORS-FLIGHT EXAMINERS (GRP097)	4.9	264	18.6
H-1 NCOIC-AIRCREW INSTRUCTORS (GRP055)	4.8	193	16.1
H-3 MID-AIR RETRIEVAL SYSTEM (MARS) OPERATORS (GRP117)	4.7	210	15.7
H-3, H-53 COMBAT MISSION FLIGHT ENGINEERS (GRP091)	4.7	193	14.8
H-1 FLIGHT EXAMINERS (GRP039)	4.9	127	12.5
H-3, H-53 SUPPORT MISSION FLIGHT ENGINEERS (GRP084)	4.5	161	11.7
H-1 COMBAT MISSION FLIGHT ENGINEERS (GRP036)	4.7	127	11.0
H-3 TACTICAL AIR SUPPORT FLIGHT ENGINEERS (GRP053)	4.4	120	8.0
EXECUTIVE SUPPORT MISSION FLIGHT ENGINEERS (GRP081)	4.4	122	7.6
H-1 SUPPORT MISSION FLIGHT ENGINEERS	4.4	78	5.6
H-3 MID-AIR RETRIEVAL SYSTEM (MARS) OPERATORS (GRP013)	4.4	67	3.2

*AVERAGE TASK DIFFICULTY PER UNIT TIME SPENT

ANALYSIS OF DAFSC GROUPS

In conjunction with the identification and analysis of the job structure of the 113X0B career ladder, 3-, 5-, and 7-skill level groups within the sample were also examined. Such an analysis reveals similarities and differences between these groups in relation to the tasks they perform and the relative percentage of time spent on particular duties. This information is useful in determining the accuracy of career ladder documents, such as the AFR 39-1 Specialty Descriptions and the Specialty Training Standard (STS), as well as evaluating potential training needs.

As Table 9 illustrates, the jobs performed by helicopter flight engineers require them to allocate approximately similar amounts of time to most of the basic duty areas, regardless of skill level. In this respect, the jobs of members in this specialty do not vary much from the 3-skill level through the 7-skill level. In fact, respondents holding the 11370B DAFSC still reported spending nearly 77 percent of their relative job time on technically oriented tasks (Duties F through I)*. There were, however, some shifts in emphasis as a result of increasing experience levels. For example, the average percent of time spent on supervisory and administrative duties tended to approximately double from one skill level to the next (seven percent for 3-levels, 12 percent for 5-levels, and 23 percent for 7-levels). The percentage of time devoted to performing preflight, inflight, and postflight functions (Duty G) steadily decreased as skill level increased. Compared to the other DAFSC groups, 11330B respondents reported spending a slightly smaller amount of time performing maintenance duties away from the home station (Duty I).

In terms of differences in actual tasks performed, very few functions were performed by greater percentages of 3-level than 5-level personnel. Basically, the tasks best differentiating these two groups were a result of the fact that approximately one-third of the 11330B personnel indicated performing Mid-Air Retrieval System (MARS) tasks compared to only one percent of the 5-levels (see Table 10). By comparison, the 5-skill level incumbents performed a wide variety of additional tasks not commonly performed by their less experienced counterparts. Most notably, many of these functions involved maintenance on the aircraft while away from the home station. Such tasks included servicing tail rotor assemblies, removing or replacing transmission chip detector systems, and taking spectrometric oil analysis program (SOAP) samples. Also included were additional operationally-oriented functions, such as operating dead reckoning air navigation computers, performing paradrop and high altitude low opening (HALO) paradrop procedures, operating inflight tracking equipment, and performing maintenance on weapons systems. Greater percentages of 11350B airmen reported assuming such directional responsibilities as directing refueling or defueling operations, directing towing or parking of the aircraft, and directing evaluations of the aircraft performance data (see Table 10).

*Some caution is needed in interpreting 3-skill level data, since there was a very small sample (N=12). This specialty is unusual in the sense that almost 50 percent of the incumbents hold a 7-skill level (see also Table 3 in the INTRODUCTION; only seven percent are in their first enlistment).

The tasks performed by 7-skill level personnel, in contrast, seem most representative of the functions performed within the entire career ladder as a whole. Unlike many specialties in which the most senior individuals no longer perform many of the more basic technical tasks and, instead, assume a primarily supervisory role, 11370B incumbents gain additional supervisory responsibilities while still performing most of the same tasks as the 3- and 5-skill level airmen.

As illustrated by Table 11, a large number of tasks were common across all three skill levels and covered a wide range of flight engineer functions, such as working with cargo and passengers; maintaining current status of manuals, supplements, and checklists; computing data for Takeoff and Landing (TOLD) cards; and performing visual inspections. In fact, although many of the tasks which best differentiated the 5- and 7-level airmen were supervisory or managerial, greater percentages of 11370B personnel also indicated performing some technical tasks, such as performing flight tests for new equipment validation or new flight procedures; computing climb, cruise, or descent data; operating navigation equipment other than radar; and removing and replacing cockpit instruments or instrument indicators (see Table 12).

Background differences were also evident between the skill levels. The average number of tasks performed increases as a result of the additional responsibilities gained at higher skill levels. Likewise, as an individual progresses through the 113X0B career ladder, the depth of the job performed is likely to expand in variety and include such additional jobs as Instructor Flight Engineer, NCOIC, and Flight Examiner, among others. Consequently, 11370B airmen accounted for the majority of respondents holding such job titles (see Table 13). This progression is also reflected in the distribution of DAFSC groups across the identified specialty jobs. As demonstrated by Table 14, because few of the 3-skill level airmen sampled held current qualifications in the H-1, these incumbents were scattered among the H-3 and H-53 job groups. In contrast, 5-skill level respondents performed a greater diversity of jobs and were found among all the functional groups, with the greatest single concentrations within the H-1 and H-3, H-53 Combat Mission Flight Engineers job groupings (GRP036 and GRP091). Similar to the 11350B incumbents, 7-skill level members were also found in all major functional groupings. The greatest single concentrations of these individuals, though, were among three groups: the H-3, H-53 Combat Mission Flight Engineers (GRP091), the H-3, H-53 Aircrew Instructors-Flight Examiners (GRP097), and the H-1 NCOIC-Aircrew Instructors (GRP055).

TABLE 9

AVERAGE PERCENT TIME SPENT PERFORMING DUTIES BY DAFSC GROUPS

DUTIES	TOTAL SAMPLE (N=231)	DAFSC 11330B (N=12)	DAFSC 11350B (N=104)	DAFSC 11370B (N=115)
A PLANNING AND ORGANIZING	3	1	2	4
B DIRECTING AND IMPLEMENTING	5	3	4	6
C INSPECTING AND EVALUATING	3	1	2	4
D TRAINING	5	1	3	7
E PERFORMING ADMINISTRATIVE FUNCTIONS	2	1	1	2
F PERFORMING COMMON AIRCREW TASKS	21	21	23	19
G PERFORMING PREFLIGHT, INFLIGHT, AND POST FLIGHT FUNCTIONS	40	52	42	37
H PERFORMING OPERATIONAL FUNCTIONS	14	15	15	14
I PERFORMING HELICOPTER MAINTENANCE DUTIES (AWAY FROM HOME STATION)	7	5	8	7

TABLE 10

TASKS WHICH BEST DIFFERENTIATE BETWEEN 3- AND 5-SKILL LEVEL PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		DAFSC 11330B (N=12)	DAFSC 11350B (N=104)	DIFFERENCE
H328	PERFORM MID-AIR RETRIEVAL SYSTEM (MARS) RETRIEVALS	33	1	+32
H327	PERFORM MID-AIR RETRIEVAL SYSTEM (MARS) OPERATIONAL CHECKS	25	1	+24
I356	PERFORM AIRCRAFT PRE- OR POST- TRANSFER INSPECTIONS	50	26	+24
F182	PICK UP COFFEE JUGS, WATER JUGS, OR OVENS	50	29	+21
B49	INVENTORY EQUIPMENT, TOOLS, OR SUPPLIES	67	49	+18
G279	PERFORM FUNCTIONAL CHECK FLIGHT (FCF) DUTIES	17	67	-50
I378	SERVICE TAIL ROTOR ASSEMBLIES	0	49	-49
I375	SERVICE FUEL SYSTEMS	25	74	-49
I379	SERVICE TRANSMISSIONS	17	58	-41
I373	REMOVE OR REPLACE TRANSMISSION CHIP DETECTOR SYSTEM	0	40	-40
I359	PERFORM GROUND HANDLING, TOWING OR PARKING	17	57	-40
I376	SERVICE HYDRAULIC SYSTEMS	25	63	-38
I352	ISOLATE TRANSMISSION CHIP DETECTOR SYSTEM MALFUNCTIONS	25	63	-38
I380	TAKE SPECTROMETRIC OIL ANALYSIS PROGRAM (SOAP) SAMPLES	8	45	-37
H344	RECONFIGURE AIRCRAFT FOR SPECIAL MISSIONS OR AUGMENTATION	33	70	-37
I377	SERVICE MAIN ROTOR ASSEMBLIES	17	52	-35
D100	DEMONSTRATE HOW TO LOCATE TECHNICAL INFORMATION	0	35	-35
H312	OPERATE DEAD RECKONING AIR NAVIGATIONAL COMPUTERS	8	42	-34
H331	PERFORM PARADROP PROCEDURES	25	57	-32
F162	OPERATE ULTRAHIGH FREQUENCY (UHF) RADIOS	25	56	-31
H340	PERFORM WEAPONS SYSTEMS OPERATIONAL CHECKS	17	47	-30
B39	DIRECT REFUELING OR DEFUELING OPERATIONS	25	49	-24
G270	OPERATE LG EMERGENCY SYSTEMS	17	40	-24
G210	DIRECT TOWING OR PARKING OF AIRCRAFT	17	38	-22
H316	OPERATE INFLIGHT TRACKING EQUIPMENT	8	30	-21
B30	DIRECT EVALUATIONS OF AIRCRAFT PERFORMANCE DATA	8	30	-21
I370	REMOVE OR REPLACE COCKPIT INSTRUMENTS OR INSTRUMENT INDICATORS	8	29	-21
I351	ISOLATE FUEL SYSTEM MALFUNCTIONS	25	45	-20
H339	PERFORM STATIC LINE OR HIGH ALTITUDE LOW OPENING (HALO) PARADROP PROCEDURES	17	37	-20
H307	INSPECT WEAPONS SYSTEMS	33	52	-19
H341	PERFORM WEAPONS SYSTEMS OPERATOR MAINTENANCE	17	32	-15

AVERAGE NUMBER OF TASKS PERFORMED BY 11330B PERSONNEL - 130
AVERAGE NUMBER OF TASKS PERFORMED BY 11350B PERSONNEL - 149

TABLE 11

EXAMPLES OF TASKS COMMON ACROSS 113X0B SKILL LEVELS
(PERCENT MEMBERS PERFORMING)

TASKS		DAFSC 11330B (N=12)	DAFSC 11350B (N=104)	DAFSC 11370B (N=115)
B32	DIRECT LOADING OR UNLOADING OF CARGO	58	73	83
F144	ADVISE MAINTENANCE PERSONNEL IN IDENTIFYING AIRCRAFT SYSTEM MALFUNCTIONS	75	89	90
F145	ANNOTATE AIRCRAFT WRITE-UPS ON MAINTENANCE DISCREPANCY AND WORK DOCUMENT FORMS (AFTO FORM 781A)	92	93	92
F146	APPLY EXTERNAL ALTERNATING CURRENT (AC) OR DIRECT CURRENT (DC) POWER TO AIRCRAFT	58	82	74
F152	INSTRUCT EXTRA CREW MEMBERS OR PASSENGERS ON INFLIGHT OR GROUND EMERGENCY PROCEDURES	83	95	94
F154	MAINTAIN CURRENT STATUS OF FLIGHT MANUALS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	83	90	90
F155	MONITOR RADIO COMMUNICATION TRANSMISSIONS	83	91	94
F156	OPEN OR CLOSE CREW ENTRANCE DOORS	92	97	92
F185	SECURE EQUIPMENT FOR DESCENT OR LANDING	100	98	93
F190	VISUALLY INSPECT PANELS, LOCKS, OR FASTENERS	83	96	93
G194	BALANCE CARGO	75	79	84
G202	COMPUTE ROUTINE LANDING DATA FOR TAKEOFF AND LANDING DATA (TOLD) CARDS	67	85	87
G203	COMPUTE ROUTINE TAKEOFF DATA FOR TAKEOFF AND LANDING DATA (TOLD) CARDS	92	92	91
G204	COMPUTE WEIGHT AND BALANCE DATA FOR STANDARD CONFIGURATIONS	100	81	87
G205	DETERMINE FUEL CONSUMPTION USING TIME, SPEED, AND DISTANCE FORMULAS AND CHARTS	58	66	67
G240	LOAD OR OFFLOAD CARGO USING CARGO SLING	50	73	78
G241	LOAD OR OFFLOAD CARGO WITHOUT USING CARGO SLING	58	82	82
G242	LOAD OR OFFLOAD PERSONNEL	75	89	87
G276	PERFORM AIRCREW OBSERVER OR SCANNER DUTIES	92	89	91
H297	COMPUTE REMOTE SITE OPERATION (RSO) DATA FOR TAKEOFF AND LANDING DATA (TOLD) CARDS	100	80	84
H298	COMPUTE WEIGHT AND BALANCE DATA FOR NONSTANDARD CONFIGURATIONS	67	77	87
H301	DETERMINE LANDING ZONE FACTORS (REMOTE SITE OPERATION)	92	80	82
H310	LOAD OR OFFLOAD LITTERS	58	65	79
H311	LOAD OR OFFLOAD PYROTECHNICS	42	67	73
H330	PERFORM OR SIMULATE SEARCH AND RESCUE (SAR) PROCEDURES	67	72	79
I360	PERFORM GROUND REFUELING OPERATIONS	92	83	83
I371	REMOVE OR REPLACE ELECTRICAL LIGHTING COMPONENTS, SUCH AS FUSES OR BULBS	58	55	61

TABLE 12

TASKS WHICH BEST DIFFERENTIATE BETWEEN 5- AND 7-SKILL LEVEL PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		DAFSC 11350B (N=104)	DAFSC 11370B (N=115)	DIFFERENCE
A14	ESTABLISH PERFORMANCE STANDARDS FOR SUBORDINATES	11	58	-47
B47	INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	16	59	-43
B28	COUNSEL PERSONNEL ON PERSONAL OR MILITARY RELATED PROBLEMS	16	59	-43
B57	WRITE CORRESPONDENCE	20	63	-43
C84	PREPARE APRs	15	53	-38
B53	SUPERVISE FLIGHT ENGINEER SPECIALISTS (AFSC 11350B)	21	58	-37
D99	COUNSEL TRAINEES ON TRAINING PROGRESS	25	62	-37
B24	ADVISE UNIT COMMANDER OR STAFF ON STATUS OF FLIGHT ENGINEER ACTIVITIES OTHER THAN TRAINING	20	57	-37
A13	ESTABLISH ORGANIZATIONAL POLICIES, OFFICE INSTRUCTIONS (OI), OR STANDING OPERATING PROCEDURES (SOP)	22	57	-35
D87	ADMINISTER TESTS	21	56	-35
A1	ASSIGN PERSONNEL TO DUTY STATIONS	9	43	-34
A20	PLAN WORK ASSIGNMENTS	14	47	-33
E142	PREPARE USAF INVOICE FORMS (AF FORM 15)	20	52	-32
A11	DEVELOP WORK METHODS OR PROCEDURES	18	50	-32
E126	COMPLETE CERTIFICATE OF AIRCREW QUALIFICATION FORMS	11	42	-31
B54	SUPERVISE FLIGHT ENGINEER TECHNICIANS (AFSC 11370B)	12	42	-30
D91	CONDUCT JOB PROFICIENCY TRAINING	16	46	-30
D94	CONDUCT REQUALIFICATION TRAINING	23	51	-28
B51	SUPERVISE APPRENTICE FLIGHT ENGINEER SPECIALISTS (AFSC 11330B)	23	51	-28
D98	CONDUCT TRANSITION TRAINING	19	43	-23
F174	PERFORM FLIGHT TEST FOR NEW FLIGHT PROCEDURES	18	41	-23
F186	SELECT MAINTENANCE BREVITY CODES	19	41	-22
G227	INSPECT FUEL FOR CONTAMINANTS	13	32	-19
G283	PERFORM POWER PLANT IGNITION SYSTEM OPERATIONAL CHECKS	26	43	-18
F173	PERFORM FLIGHT TEST FOR NEW EQUIPMENT VALIDATION	29	46	-17
G272	OPERATE NAVIGATION EQUIPMENT OTHER THAN RADAR	32	49	-17
G250	MONITOR FUEL DUMP SYSTEM OPERATIONS	33	50	-17
G197	COMPUTE CLIMB DATA	27	42	-15
I382	WASH AND RUSTPROOF ENGINES	18	33	-15
I370	REMOVE OR REPLACE COCKPIT INSTRUMENTS OR INSTRUMENT INDICATORS	29	43	-15
G198	COMPUTE CRUISE DATA	39	53	-14
G199	COMPUTE DESCENT DATA	25	38	-13

AVERAGE NUMBER OF TASKS PERFORMED BY 11350B PERSONNEL - 149
AVERAGE NUMBER OF TASKS PERFORMED BY 11370B PERSONNEL - 186

TABLE 13

BACKGROUND INFORMATION BY DAFSC GROUPS

	DAFSC 11330B (N=12)	DAFSC 11350B (N=104)	DAFSC 11370B (N=115)
AVERAGE NUMBER OF TASKS PERFORMED:	130	149	186
DAFSC PREFIX:			
A (AIRCREW)	75%	64%	31%
M (STANDARDIZATION/FLIGHT EXAMINER)	-	-	26%
T (TECHNICAL TRAINING INSTRUCTOR)	-	1%	2%
K (AIRCREW INSTRUCTOR)	-	11%	28%
OTHER	25%	24%	11%
TYPE MISSION FLOWN IN PRESENT JOB:			
NOT REQUIRED TO FLY	-	3%	4%
AIR RESCUE/RECOVERY	25%	42%	40%
AIR TRAINING/TEST	-	9%	17%
DRONE RECOVERY (MARS)	25%	2%	8%
EXECUTIVE SUPPORT	-	11%	5%
MISSILE SUPPORT	8%	2%	-
SPECIAL OPERATIONS	17%	20%	16%
OTHER	25%	16%	12%
JOB TITLE OF PRESENT JOB:			
ACADEMIC INSTRUCTOR	-	5%	4%
INSTRUCTIONAL MATERIALS MANAGER	-	1%	3%
INSTRUCTOR FLIGHT ENGINEER	-	23%	25%
RESOURCE MANAGER (NCOIC OR CHIEF FLIGHT ENGINEER)	-	1%	14%
SIMULATOR INSTRUCTOR	-	-	-
STANDARD/EVALUATION (FLIGHT EXAMINER)	-	5%	27%
STUDENT FLIGHT ENGINEER	8%	2%	1%
UNIT FLIGHT ENGINEER	92%	65%	24%
OTHER	-	-	4
AIRCRAFT HOLD CURRENT QUALIFICATION*			
H-1	17%	50%	36%
H-3	58%	28%	36%
H-53	33%	34%	36%

*MORE THAN ONE RESPONSE IS POSSIBLE

TABLE 14

DAFSC DISTRIBUTION ACROSS SPECIALTY JOBS
(NUMBER OF INDIVIDUALS)

JOB GROUPS		DAFSC 11330B (N=7)	DAFSC 11350B (N=85)	DAFSC 11370B (N=93)
H-3, H-53	SUPPORT MISSION FLIGHT ENGINEERS (GRP084)	2	11	9
H-3	TACTICAL AIR SUPPORT FLIGHT ENGINEERS (GRP053)	2	4	2
H-3	MID-AIR RETRIEVAL SYSTEM (MARS) OPERATORS (GRP013)	2	2	1
H-3, H-53	COMBAT MISSION FLIGHT ENGINEERS (GRP091)	1	26	22
H-1	COMBAT MISSION FLIGHT ENGINEERS (GRP036)	-	17	5
H-1	NCOIC-AIRCREW INSTRUCTORS (GRP055)	-	7	16
H-1	SUPPORT MISSION FLIGHT ENGINEERS (GRP012)	-	7	1
	EXECUTIVE SUPPORT MISSION FLIGHT ENGINEERS (GRP081)	-	4	1
	STAFF MANAGERS (GRP016)	-	3	4
H-53	MID-AIR RETRIEVAL SYSTEM (MARS) OPERATORS (GRP117)	-	2	3
H-3, H-53,	AIRCREW INSTRUCTORS-FLIGHT EXAMINERS (GRP097)	-	1	23
H-1	FLIGHT EXAMINERS (GRP039)	-	1	5

Summary of DAFSC Analysis

The jobs of 113X0B personnel tend to be very similar in terms of the basic flight engineer functions performed and the relative amount of time devoted to these areas. Due to the additional technical, supervisory, and managerial responsibilities acquired at higher skill levels, 113X0B airmen perform a wider diversity of jobs as experience levels increase.

COMPARISON OF SURVEY DATA TO AFR 39-1 SPECIALTY DESCRIPTIONS

A comparison was made between the survey data and the specialty descriptions for the 113X0 career ladder as outlined in AFR 39-1. These documents were written to provide a broad description of the functions performed by members of both shreds of the specialty (B and C).

Basically, survey information indicates that the current AFR 39-1 job descriptions provide a very complete overview of the duties and responsibilities of individuals in the field.

ANALYSIS OF EXPERIENCE (TAFMS) GROUPS

Examining survey respondents at different experience levels gives an appreciation of how jobs and responsibilities change over time, and provides a description of the kinds of duties more junior incumbents can look forward to performing in the future.

As illustrated by Table 15, all changes in the relative percentage of time spent on each of the major duty areas occur very gradually as experience increases in the 113X0B career field. In effect, two major trends seemed apparent. With additional months accumulated in Total Active Federal Military Service (TAFMS), 113X0B airmen spent greater percentages of their time on supervisory and training functions, while devoting less time to common aircrew tasks and preflight, inflight, or postflight functions. The major emphasis of the job, though, was still technical, and even at the sixth enlistment (241+ months), these tasks accounted for approximately 64 percent of their time. Unlike the other functional areas, the relative percentages of time devoted to administrative, operational, and maintenance duties did not vary much with increasing experience levels.

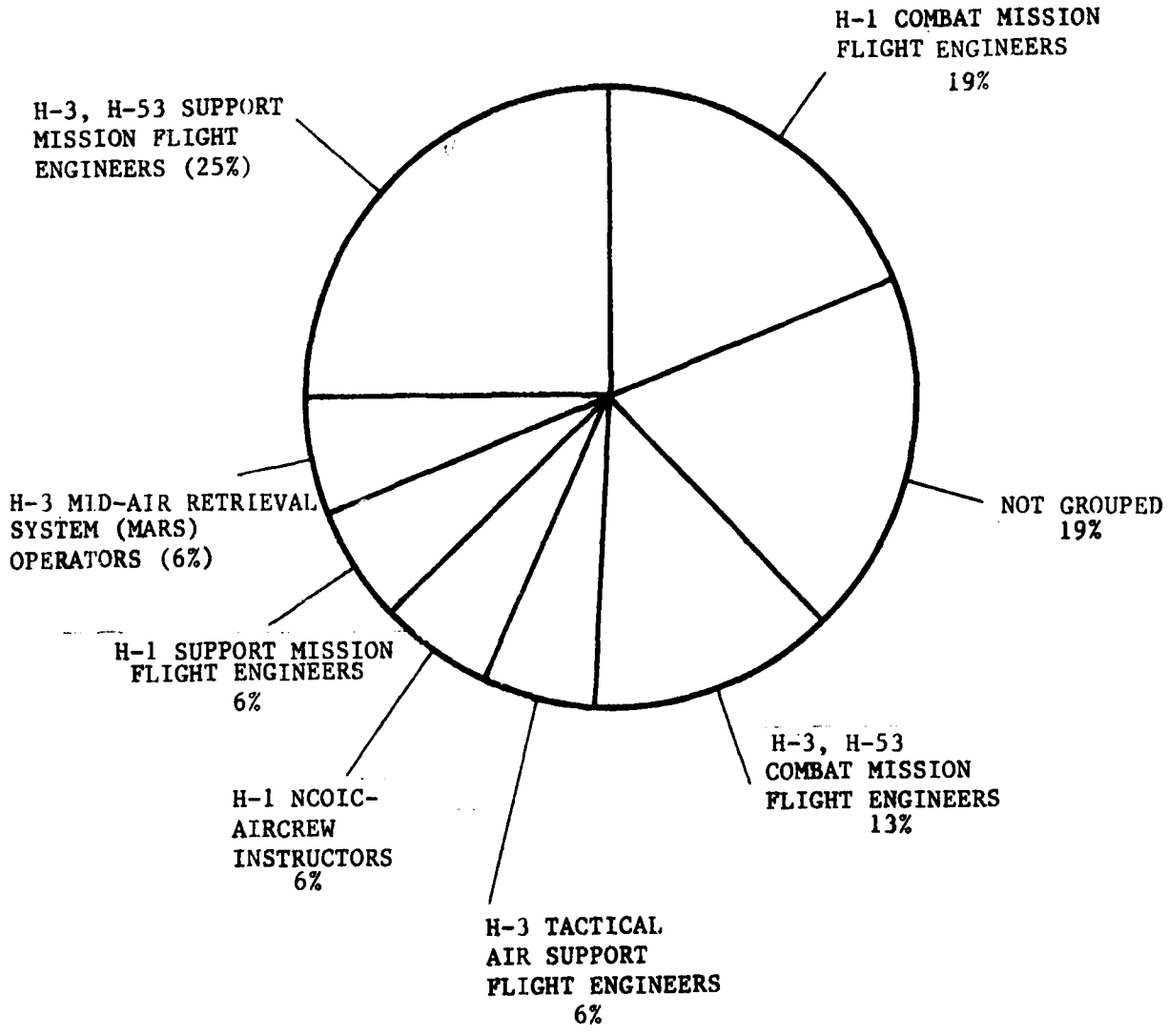
The number of tasks performed also increases very gradually from one experience group to the next. The fact that the scope of the flight engineer's job broadens with experience is also reflected in the structure of the specialty jobs. As shown by this analysis, the most experienced people tended to be found in those groups performing the widest range and greatest overall number of tasks. While much of this difference is accounted for by the growing supervisory and training responsibilities, the additional tasks were not limited to these duty areas and, instead, covered a wide range of technical flight engineer functions. For example, Table 16 lists examples of some of these technical tasks reflecting the experience level increases. As this table demonstrates, many tasks involve systems operation, systems servicing, and performing some common aircrew tasks.

First-Enlistment Personnel

Presented on Figure 2 is a distribution of first-term 113X0B respondents across job groups identified in the SPECIALTY JOBS section of this report. As this figure illustrates, first-enlistment personnel participated in a full range of flight engineer activities and were members of almost every major type of technically-oriented job. Table 17 provides examples of some of the tasks commonly performed by airmen with 1-48 months TAFMS. These items basically reflect the same kinds of tasks common among incumbents within the career ladder, indicating that first-enlistment members are not simply oriented toward performing a limited type of job. The majority of first-term individuals fell into one of three groups: H-3, H-53 Support Mission Flight Engineers, H-1 Combat Mission Flight Engineers, and H-3, H-53 Combat Mission Flight Engineers. All three of these groups were found within the full performance cluster.

FIGURE 2

DISTRIBUTION OF FIRST-ENLISTMENT PERSONNEL ACROSS CAREER LADDER JOBS
(PERCENT MEMBERS RESPONDING)
(N=16)



Job Satisfaction

Table 18 reflects the job interest, perceived utilization of talents and training, and reenlistment intentions of first-enlistment (1-48 months), second-enlistment (49-96 months), and career (97+ months) personnel. In all three cases overall expressed job satisfaction were systematically slightly higher for 113X0B airmen than for members of the comparative sample. In effect, although respondents in both samples appeared fairly content with their jobs, reenlistment intentions among the helicoptor qualified flight engineers were somewhat more positive.

TABLE 15

RELATIVE PERCENTAGE OF TIME SPENT ON DUTIES BY TAFMS GROUPS

DUTIES	MONTHS TAFMS 1-48 (N=16)	49-96 (N=51)	97-144 (N=52)	145-192 (N=52)	193-240 (N=44)	241+ (N=16)
A PLANNING AND ORGANIZING	2	2	2	3	4	7
B DIRECTING AND IMPLEMENTING	3	4	4	6	6	11
C INSPECTING AND EVALUATING	2	3	3	4	4	7
D TRAINING	1	3	2	6	7	9
E PERFORMING ADMINISTRATIVE FUNCTIONS	1	1	1	2	2	2
F PERFORMING COMMON AIRCREW TASKS	22	21	25	19	19	15
G PERFORMING PREFLIGHT, INFLIGHT, AND POSTFLIGHT FUNCTIONS	48	42	42	39	38	30
H PERFORMING OPERATIONAL FUNCTIONS	13	16	15	14	13	11
I PERFORMING HELICOPTER MAINTENANCE DUTIES (AWAY FROM HOME STATION)	8	8	6	7	7	8

TABLE 16

EXAMPLES OF TASKS REFLECTING EXPERIENCE LEVEL INCREASES

TASKS		MONTHS TAFMS 1-48 (N=16)	49-96 (N=51)	97+ (N=164)
F161	OPERATE HIGH FREQUENCY (HF) RADIOS	25	24	40
F173	PERFORM FLIGHT TEST FOR NEW EQUIPMENT VALIDATION	13	35	39
F174	PERFORM FLIGHT TEST FOR NEW FLIGHT PROCEDURES	19	20	34
G232	INSPECT NAVIGATION EQUIPMENT	25	37	46
G264	OPERATE FUEL DUMP SYSTEMS	25	26	44
G265	OPERATE FUEL FEED SYSTEMS	38	47	53
G270	OPERATE LG EMERGENCY SYSTEMS	25	33	44
G272	OPERATE NAVIGATION EQUIPMENT OTHER THAN RADAR	25	28	45
G279	PERFORM FUNCTIONAL CHECK FLIGHT (FCF) DUTIES	38	63	73
G285	PERFORM PREFLIGHT AFCS OPERATIONAL CHECKS	13	22	35
H310	LOAD OR OFFLOAD LITTERS	56	65	76
H312	OPERATE DEAD RECKONING AIR NAVIGATION COMPUTERS	13	39	42
H326	PERFORM INSERTION OR EXTRACTION OPERATION DUTIES	44	49	56
I352	ISOLATE TRANSMISSION CHIP DETECTOR SYSTEM MALFUNCTIONS	50	61	70
I370	REMOVE OR REPLACE COCKPIT INSTRUMENTS OR INSTRUMENT INDICATORS	25	18	42
I373	REMOVE OR REPLACE TRANSMISSION CHIP DETECTOR SYSTEMS	19	35	50
I376	SERVICE HYDRAULIC SYSTEMS	44	61	65
I377	SERVICE MAIN ROTOR ASSEMBLIES	31	49	61
I378	SERVICE TAIL ROTOR ASSEMBLIES	31	41	56

TABLE 17

EXAMPLES OF TASKS COMMONLY PERFORMED BY FIRST-ENLISTMENT PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		1-48 MONTHS TAFMS PERSONNEL (N=16)
G276	PERFORM AIRCREW OBSERVER OR SCANNER DUTIES	100
F185	SECURE EQUIPMENT FOR DESCENT OR LANDING	100
F190	VISUALLY INSPECT PANELS, LOCKS, OR FASTENERS	100
F184	REVIEW AFTO FORM 781 SERIES FOR AIRCRAFT DISCREPANCIES	100
F154	MAINTAIN CURRENT STATUS OF FLIGHT MANUALS, SAFETY, AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	100
G251	MONITOR FUEL FLOW, CONSUMPTION, OR TRANSFER	100
H297	COMPUTE REMOTE SITE OPERATION (RSO) DATA FOR TAKEOFF AND LANDING DATA (TOLD) CARDS	100
G253	MONITOR INSTRUMENT SYSTEMS	100
F167	PARTICIPATE IN GENERAL OR SPECIALIZED MISSION BRIEFINGS	100
G204	COMPUTE WEIGHT AND BALANCE DATA FOR STANDARD CONFIGURATIONS	100
F153	LOAD CREW GEAR ON AIRCRAFT	100
G244	MAKE ENTRIES ON AIRCRAFT WEIGHT AND BALANCE FORMS (DD FORM 365 SERIES)	100
G203	COMPUTE ROUTINE TAKEOFF DATA FOR TAKEOFF AND LANDING DATA (TOLD) CARDS	94
F187	STUDY TECHNICAL ORDERS FOR ABNORMAL AND EMERGENCY WEIGHT PROCEDURES	94
G269	OPERATE INTERPHONES	94
F156	OPEN OR CLOSE CREW ENTRANCE DOORS	94
G228	INSPECT FUEL TANK CAP SECURITY	94
G219	INSPECT COCKPITS OR CABIN COMPARTMENTS	94
F177	PERFORM PERSONAL EQUIPMENT INSPECTION	94
F155	MONITOR RADIO COMMUNICATION TRANSMISSIONS	94
G221	INSPECT DOORS OR RAMPS	94
G237	INSPECT SEATS, SEAT BELTS, OR SHOULDER HARNESSES	94
F145	ANNOTATE AIRCRAFT WRITE-UPS ON MAINTENANCE DISCREPANCY AND WORK DOCUMENT FORMS (AFTO FORM 781A)	94
I360	PERFORM GROUND REFUELING OPERATIONS	94
H342	PREPARE CARGO SLING FOR LOADING OR OFFLOADING	81

TABLE 18

COMPARISON OF JOB SATISFACTION INDICATORS BY TAFMS GROUPS
(PERCENT MEMBERS RESPONDING)*

	1-48 MONTHS TAFMS		49-96 MONTHS TAFMS		97+ MONTHS TAFMS	
	113X0B	COMPARATIVE SAMPLE	113X0B	COMPARATIVE SAMPLE	113X0B	COMPARATIVE SAMPLE
EXPRESSED JOB INTEREST:						
DULL	-	11	6	12	5	8
SO-SO	-	16	6	6	6	6
INTERESTING	100	77	86	80	88	85
NO RESPONSE	-	-	2	2	1	1
PERCEIVED UTILIZATION OF TALENTS:						
NOT AT ALL TO VERY LITTLE	-	40	8	29	10	18
FAIRLY WELL TO PERFECTLY	100	60	82	71	90	81
NO RESPONSE	-	-	-	-	1	1
PERCEIVED UTILIZATION OF TRAINING:						
NOT AT ALL TO VERY LITTLE	-	13	10	7	9	9
FAIRLY WELL TO PERFECTLY	100	87	90	92	91	90
NO RESPONSE	-	-	-	1	-	1
REENLISTMENT INTENTIONS:						
NO, OR PROBABLY NO	25	39	14	28	23	28
YES, OR PROBABLY YES	75	61	84	71	76	71
NO RESPONSE	-	-	2	1	1	1

*COMPARATIVE SAMPLE TAKEN FROM THE AIRCREW SPECIALTY SURVEYED IN 1981 (111X0)

ANALYSIS OF CONUS VERSUS OVERSEAS GROUPS

Comparisons between the functions performed, background data, and equipment used by airmen assigned overseas versus those assigned within CONUS can provide useful information for trainers and managers.

Basically, for the 113XOB specialty, the jobs of airmen assigned overseas are very similar to those of their counterparts stationed within CONUS. On the average, members of both groups spend similar amounts of time on each of the major career ladder functions, such as performing preflight, inflight, and postflight functions; performing common aircrew tasks; and performing operational functions. As a result, the average number of tasks performed were approximately the same (145 versus 157 overseas), although some individual task differences were found between the two groups. For example, as Table 19 demonstrates, greater percentages of individuals working within CONUS reported performing paradrop procedures, performing static line or high altitude low opening (HALO) paradrop procedures, performing flight tests for new equipment validation or new flight procedures, and operating UHF or VHF radios. On the other hand, higher percentages of overseas incumbents performed such general tasks as inspecting, monitoring, and operating fuel dump systems; performing air refueling operations; computing cruise, climb, and maximum endurance and holding data; and performing ship pickup procedures. Minor differences in the tasks performed, such as these, seem partially to reflect differences between these two groups in the type of mission presently flown. On the average, a greater percentage of overseas personnel reported flying rescue and recovery missions, while a slightly higher percentage of airmen stationed within CONUS reported performing special operations (see Table 20). Additionally, although very few individuals overall fly drone recovery (MARS) or executive support missions, only respondents assigned to CONUS locations indicated currently being involved with such functions.

Background differences were also apparent between the two sets of incumbents. Overall, overseas personnel had a much greater average number of months in the career field (58 versus 40 months), while the average number of months in service (TAFMS) was essentially the same for both groups. Much of this additional time in service seems to be a result of the fact that 45 percent of the respondents assigned within CONUS indicated they had been retrained from another specialty. Notable trends in current aircraft qualifications were also identifiable. Fifty-nine percent of the individuals working within CONUS reported holding current qualifications in the H-1 aircraft, as opposed to 25 percent of the overseas respondents. Conversely, 54 percent of the overseas personnel indicated holding present qualifications in the H-53, while only 26 percent of the CONUS airmen gave similar responses. Approximately equal percentages of incumbents in both groups hold qualifications in the H-3.

Job satisfaction was extremently high for airmen assigned both overseas and within CONUS. Members of both groups reported very high job interest and felt that their talents and training were being utilized well.

TABLE 19

TASKS WHICH BEST DIFFERENTIATE BETWEEN DAFSC 113X0B
CONUS AND OVERSEAS PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS	CONUS (N=76)	OVERSEAS (N=28)	DIFFERENCE
F182 PICK UP COFFEE JUGS, WATER JUGS, OR OVENS	34	14	+20
H329 PERFORM NIGHT VISION GOGGLE OPERATIONS	30	11	+19
H331 PERFORM PARADROP PROCEDURES	62	43	+19
G210 DIRECT TOWING AND PARKING OF AIRCRAFT	43	25	+18
H339 PERFORM STATIC LINE OR HIGH ALTITUDE LOW OPENING (HALO) PARADROP PROCEDURES	41	25	+16
F174 PERFORM FLIGHT TEST FOR NEW FLIGHT PROCEDURES	22	7	+15
F173 PERFORM FLIGHT TEST FOR NEW EQUIPMENT VALIDATION	33	18	+15
F188 TURN IN AIRCRAFT LIFE SUPPORT EQUIPMENT	61	47	+14
F162 OPERATE ULTRAHIGH FREQUENCY (UHF) RADIOS	59	46	+13
G274 OPERATE VERY HIGH FREQUENCY (VHF) RADIOS	50	39	+11
.	.	.	.
.	.	.	.
.	.	.	.
G225 INSPECT EXTERNAL TANKS	37	71	-34
G270 OPERATE LG EMERGENCY SYSTEMS	32	64	-32
G226 INSPECT FUEL DUMP SYSTEMS	25	57	-32
G212 INSPECT AIR REFUELING SYSTEMS	28	57	-29
G284 PERFORM POWER PLANT STARTS, RUN-UPS, OR SHUT DOWNS	42	71	-29
G271 OPERATE LG NORMAL SYSTEMS	36	64	-28
G201 COMPUTE MAXIMUM ENDURANCE AND HOLDING DATA	41	68	-27
H313 OPERATE HOIST LIGHTS	30	57	-27
G266 OPERATE FUEL TRANSFER PUMPS OR CONTROLS	49	75	-26
G196 COMPUTE AIR REFUELING DATA	32	57	-25
G250 MONITOR FUEL DUMP SYSTEM OPERATIONS	26	50	-24
G264 OPERATE FUEL DUMP SYSTEMS	28	50	-22
G275 PERFORM AIR REFUELING OPERATIONS	32	54	-22
F175 PERFORM HIGH ALTITUDE PROCEDURES IN ALTITUDE CHAMBER	30	50	-20
H336 PERFORM SHIP PICKUP PROCEDURES	13	32	-19
G198 COMPUTE CRUISE DATA	36	50	-14
G197 COMPUTE CLIMB DATA	24	36	-12
I377 SERVICE MAIN ROTOR ASSEMBLIES	49	61	-12
I355 PERFORM AIR REFUELING SYSTEM OPERATIONAL CHECKS	25	36	-11

TABLE 20
BACKGROUND INFORMATION FOR 113XOB CONUS AND OVERSEAS GROUPS

	CONUS (N=76)	OVERSEAS (N=28)
AVERAGE NUMBER OF TASKS PERFORMED:	145	157
MAJOR COMMAND:		
ATC	1%	0
TAC	36%	7%
USAFE	1%	11%
AFSC	5%	18%
MAC	57%	64%
AVERAGE MONTHS IN CAREER FIELD:	40	58
AVERAGE MONTHS IN SERVICE (TAFMS):	105	110
HOW ASSIGNED TO PRESENT CAREER LADDER:		
COMPLETED RESIDENT TECHNICAL TRAINING	12%	36%
RECLASSIFIED WITHOUT COMPLETING TECH TNG OR OJT	15%	7%
DIRECTED DUTY ASSIGNMENT (DDA) FROM BASIC TNG TO OJT WITHOUT BYPASS TEST	4%	0
DDA FROM BASIC TRAINING BY BYPASS TEST	0	0
CONVERTED FROM ANOTHER AF SPECIALTY WITHOUT TRAINING BY CLASSIFICATION BOARD ACTION	13%	14%
RETRAINED FROM ANOTHER SPECIALTY	45%	25%
REENLISTED AFTER PRIOR SERVICE IN USAF OR FROM ANOTHER BRANCH OF SERVICE	0	0
NONE OF THE ABOVE METHODS	9%	18%
TYPE OF MISSION FLY IN PRESENT JOB:		
NOT REQUIRED TO FLY	2%	3%
AIR RESCUE AND RECOVERY	38%	53%
AIR TRAINING AND TEST	6%	14%
DRONE RECOVERY (MARS)	2%	0
EXECUTIVE SUPPORT	14%	0
MISSILE SUPPORT	1%	3%
SPECIAL OPERATIONS	22%	14%
OTHER	17%	14%
AIRCRAFT HOLD CURRENT QUALIFICATIONS *		
H-1	59%	25%
H-3	29%	25%
H-53	26%	54%

* MORE THAN ONE RESPONSE POSSIBLE

ANALYSIS OF MAJOR COMMAND GROUPS

A comparison of the jobs performed by each separate MAJCOM group can be helpful in determining the different training requirements for individuals in various major commands. Similarly, examining the background information provided by survey respondents also provides insight into such differences.

For members of the 113X0B specialty, the basic flight engineer functions performed by incumbents are essentially the same, regardless of command. As shown by Table 21, respondents in MAC, TAC, USAFE, and AFSC spent comparable amounts of job time on each of the major functional areas except Duty H (performing operational functions). Airmen in ATC, however, were the only exceptions. As expected, these individuals performed a distinctly separate job as a result of their unique training responsibilities. Among the other four primary commands, though, the greatest variations in tasks performed were also within the operational duty area. Such variations seemed directly related to the type of mission presently flown.

USAFE. Write-in comments from USAFE respondents indicated that the majority of the eleven airmen surveyed were flying tactical air support missions and were assigned to the 601 TASS at Sembach, Germany. Most of these incumbents, unlike many of the counterparts, were not involved with air refueling operations, deploying pyrotechnics, or performing Search and Rescue (SAR) procedures, although they performed the greatest average number of tasks of any command (see Table 22). Conversely, USAFE and TAC were the only MAJCOMS in which substantial percentages of personnel performed hot refueling operation duties. Concerning present qualifications, because the H-53 was the primary helicopter used, ten of the eleven respondents are currently qualified in this aircraft.

AFSC. Flying a slightly greater diversity of missions than reported by USAFE incumbents, three types of operations were common among AFSC respondents. Approximately 33 percent of the people performed the air training and testing mission, operating out of Hickam AFB, Hawaii, while another 38 percent were responsible for drone recovery (MARS) and were assigned to Hill AFB UT. Likewise, 19 percent of the airmen flew special operations missions. As a result, greater percentages of the incumbents in this command performed flight tests for new equipment validation or new flight procedures and performed MARS retrievals and operational checks than any other command (see Table 23). Comparatively higher percentages of these individuals were also involved with ship pickup procedures and common aircrew tasks, such as operating galley equipment and picking up or turning in coffee jugs, water jugs, or ovens. In terms of the relative amount of time spent on each of the functional areas, as opposed to other MAJCOMs, AFSC personnel devoted the smallest percentage of their overall job time to operational functions (see Table 21). For example, very few members perform paradrop procedures, while none of the AFSC airmen sampled performed insertion or extraction operation duties. Typically, less than twenty percent of the respondents were also involved with such functions as participating in pre-mission or postflight intelligence briefings, or performing small arms qualification. Like the airmen in USAFE, the H-53 was the primary aircraft, and all 21 individuals held current qualifications.

ATC. ATC personnel perform the most specialized and distinct job of all incumbents in the various commands. As expected, the tasks performed centered mainly around their training responsiblities. These members performed approximately one-third as many tasks as their counterparts, and devoted an average of 44 percent of their time to training functions, such as administering tests, conducting classroom training, and developing course curriculum materials. The remainder of their job time was spent primarily on a variety of managerial-related tasks. Of the four respondents from ATC, three were academic instructors and the remaining individual was an Instructional Materials Manager.

MAC. Flying the widest variety of missions of any command, airmen assigned to MAC represented the major portion of incumbents in the 113X0B career ladder. Unlike any other MAJCOM, the majority of individuals in this group were involved with air rescue and recovery operations (62 percent), even though smaller percentages of people reported flying other types of missions. These included air training and test, drone recovery, special operations, and missile support. Further, it is interesting to note that, while very few respondents, overall were responsible for flying executive support, those airmen who did were either MAC or TAC resources (see Table 22). In terms of the actual tasks performed, very few items were unique to MAC incumbents. Basically, as Table 23, shows slightly greater percentages of these members were involved with coordinating maintenance, scheduling, and supply activities. Most notably, though, comparatively larger percentages of airmen reported operating infrared countermeasure equipment and installing weapons systems. Among MAC respondents, approximately equal percentages of personnel held qualifications in the H-1 and H-3 (46 versus 43 percent) compared to a smaller percentage (22 percent) who were currently qualified on the H-53.

TAC. About two-thirds of the respondents assigned to TAC were flying special operations missions. For the remaining individuals, a variety of responses was prevalent. In addition to executive support, write-in responses included tactical air support, weapons wing support, and range support. Tasks distinguishing TAC personnel were mostly related to the special operations function, and included performing rappelling procedures, performing rope ladder operation duties, and performing stabo rig procedures. Because of the more operationally oriented nature of the air rescue and recovery mission performed primarily by MAC and the special operations mission performed primarily by TAC, members of these two commands perform many operational tasks in common that are not typically performed by respondents in the other three MAJCOMs. As Table 23 shows, most of these tasks involve working with weapons systems and ammunition, performing simulated combat maneuvers, or performing static line or high altitude low opening (HALO) paradrop procedures. Similar to MAC, all three types of aircraft were flown by TAC personnel. Approximately half (51 percent) of the respondents held current qualifications in the H-1, while about a third (34 percent) were presently qualified in the H-53. The H-3 was the least commonly used aircraft, with only 19 percent of the respondents holding current qualifications.

MAJCOM Job Satisfaction

Job satisfaction among 113X0B airmen was reportedly very high, regardless of command assignment. By comparison, however, overall job satisfaction was slightly higher among the MAC respondents (see Table 24). Although the majority of individuals in each MAJCOM found their jobs interesting and felt that their talents and training were utilized well, reenlistment intentions were found to be the least favorable among AFSC and ATC incumbents.

TABLE 21

AVERAGE PERCENT TIME SPENT PERFORMING DUTIES BY MAJCOM GROUPS

DUTIES	ATC (N=4)	MAC (N=149)	TAC (N=47)	USAFE (N=11)	AFSC (N=21)
A PLANNING AND ORGANIZING	10	3	2	3	3
B DIRECTING AND IMPLEMENTING	19	5	4	5	6
C INSPECTING AND EVALUATING	12	3	3	3	3
D TRAINING	44	4	4	4	5
E PERFORMING ADMINISTRATIVE FUNCTIONS	4	2	1	2	1
F PERFORMING COMMON AIRCREW TASKS	11	21	21	19	20
G PERFORMING PREFLIGHT, INFLIGHT AND POSTFLIGHT FUNCTIONS	-	40	41	46	49
H PERFORMING OPERATIONAL FUNCTIONS	-	15	16	10	7
I PERFORMING HELICOPTER MAINTENANCE DUTIES (AWAY FROM HOME STATION)	-	7	8	8	6

TABLE 22

BACKGROUND INFORMATION FOR MAJOR COMMAND GROUPS

	USAFE (N=11)	AFSC (N=21)	ATC (N=4)	MAC (N=149)	TAC (N=47)
AVERAGE NUMBER OF TASKS PERFORMED:	177	166	52	169	168
DAFSC PREFIX:					
A (AIRCREW)	55%	48%	-	38%	85%
M (STANDARDIZATION/FLIGHT EXAMINER)	-	19%	-	17%	-
T (TECHNICAL TRAINING INSTRUCTOR)	-	-	75%	-	-
K (AIRCREW INSTRUCTOR)	27%	19%	-	24%	2%
OTHER	18%	14%	25%	20%	13%
LEVEL OF ORGANIZATION:					
HQ USAF	-	-	25%	1%	6%
MAJOR COMMAND	-	-	-	1%	2%
NUMBERED AIR FORCE	-	-	-	2%	-
WING	-	-	-	8%	10%
GROUP	-	62%	50%	1%	-
SQUADRON	91%	38%	25%	49%	70%
CENTER	-	-	-	1%	2%
BASE	-	-	-	-	-
DETACHMENT	9%	-	-	37%	10%
OTHER	-	-	-	1%	-
TYPE MISSION FLY IN PRESENT JOB:					
NOT REQUIRED TO FLY	-	-	75%	2%	2%
AIR RESCUE/RECOVERY	9%	5%	-	61%	-
AIR TRAINING/TEST	-	33%	-	13%	2%
DRONE RECOVERY (MARS)	-	38%	-	4%	-
EXECUTIVE SUPPORT	-	-	-	8%	8%
MISSILE SUPPORT	-	-	-	1%	2%
SPECIAL OPERATIONS	9%	19%	-	4%	63%
OTHER	82%	5%	25%	7%	27%
AIRCRAFT HOLD CURRENT QUALIFICATIONS*					
H-1	9%	-	25%	46%	51%
H-3	-	10%	50%	43%	19%
H-53	91%	100%	25%	22%	34%

*MORE THAN ONE RESPONSE IS POSSIBLE

TABLE 23

TASKS BEST DIFFERENTIATING MAJOR COMMAND GROUPS
(PERCENT MEMBERS PERFORMING)

TASKS		USAFE	AFSC	ATC	MAC	TAC
G196	COMPUTE AIR REFUELING DATA	9	52	-	44	36
G275	PERFORM AIR REFUELING OPERATIONS	9	57	-	44	36
H300	DEPLOY PYROTECHNICS	18	52	-	83	83
H311	LOAD OR OFFLOAD PYROTECHNICS	18	43	-	79	66
H316	OPERATE INFLIGHT TRACKING EQUIPMENT	18	38	-	36	34
H330	PERFORM OR SIMULATE SEARCH AND RESCUE (SAR) PROCEDURES	18	43	-	85	79
F160	OPERATE GALLEY EQUIPMENT, SUCH AS OVENS OR COFFEE MAKERS	9	48	-	7	11
F181	PICK UP AND INSPECT FLIGHT LUNCHES	9	71	-	30	45
F182	PICK UP COFFEE JUGS, WATER JUGS, OR OVENS	9	81	-	24	36
F189	TURN IN COFFEE JUGS, WATER JUGS, OR OVENS	9	67	-	22	30
F173	PERFORM FLIGHT TEST FOR NEW EQUIPMENT VALIDATION	36	57	-	36	32
F174	PERFORM FLIGHT TEST FOR NEW FLIGHT PROCEDURES	18	57	-	30	23
H327	PERFORM MID-AIR RETRIEVAL SYSTEM (MARS) OPERATIONAL CHECKS	-	38	-	3	2
H328	PERFORM MID-AIR RETRIEVAL SYSTEM (MARS) RETRIEVALS	-	38	-	5	2
H336	PERFORM SHIP PICKUP PROCEDURES	9	33	-	23	15
F169	PARTICIPATE IN POSTFLIGHT INTELLIGENCE BRIEFINGS	64	14	-	58	51
F170	PARTICIPATE IN PREMISSION INTELLIGENCE BRIEFINGS	73	19	-	64	77
F178	PERFORM SMALL ARMS QUALIFICATION	91	14	-	89	85
H326	PERFORM INSERTION OR EXTRACTION OPERATION DUTIES	46	-	-	58	70
H331	PERFORM PARADROP PROCEDURES	36	10	-	69	61
D87	ADMINISTER TESTS	27	29	75	41	28
D93	CONDUCT OR PARTICIPATE IN TRAINING CONFERENCES	18	33	75	33	21
D95	CONDUCT RESIDENT COURSE CLASSROOM TRAINING	9	10	75	15	11
D104	DEVELOP RESIDENT COURSE OR CAREER DEVELOPMENT COURSE (CDC) CURRICULUM MATERIALS	-	-	75	5	4

TABLE 23 (CONTINUED)

TASKS		USAFE	AFSC	ATC	MAC	TAC
A3	COORDINATE CREW ASSIGNMENTS WITH FLIGHT SCHEDULING	36	33	-	50	38
A5	COORDINATE MAINTENANCE REQUIREMENTS WITH MAINTENANCE SECTION OR CREW CHIEF	9	14	-	36	21
A6	COORDINATE SUPPLY REQUEST WITH SUPPLY ACTIVITIES	27	10	25	36	23
C74	EVALUATE RESCUE AND RECOVERY OPERATIONS	18	14	-	42	17
H317	OPERATE INFRARED COUNTERMEASURE EQUIPMENT	18	-	-	32	23
H308	INSTALL WEAPONS SYSTEMS	18	5	-	58	26
H273	OPERATE RADAR	9	5	-	7	34
H315	OPERATE HOVER COUPLER OR TRIM CONTROL SYSTEMS	9	5	-	21	34
H318	OPERATE PROJECTED MAP DISPLAYS	9	-	-	1	32
H329	PERFORM NIGHT VISION GOGGLE OPERATIONS	18	-	-	20	64
H333	PERFORM RAPPELLING PROCEDURES	9	-	-	3	57
H334	PERFORM ROPE LADDER OPERATION DUTIES	9	-	-	7	38
H338	PERFORM STABO RIG PROCEDURES	9	-	-	6	45
H296	ARM WEAPONS	18	-	-	64	64
H303	FIRE WEAPONS SYSTEMS	18	-	-	66	64
H307	INSPECT WEAPONS SYSTEMS	18	10	-	65	66
H309	LOAD OR OFFLOAD AMMUNITION	18	5	-	62	47
H332	PERFORM PREFLIGHT WEAPONS SYSTEMS OPERATIONAL CHECKS	18	-	-	64	57
H337	PERFORM SIMULATED COMBAT MANEUVERS	18	-	-	73	81
H339	PERFORM STATIC LINE OR HIGH ALTITUDE LOW OPENING (HALO) PARADROP PROCEDURES	18	-	-	30	62
H341	PERFORM WEAPONS SYSTEMS OPERATOR MAINTENANCE	18	-	-	39	51
H324	PERFORM HOT REFUELING OPERATION DUTIES	64	10	-	14	45

TABLE 24

JOB SATISFACTION DATA BY MAJCOM GROUPS
(PERCENT MEMBERS RESPONDING)

	USAFE (N=11)	AFSC (N=21)	ATC (N=4)	MAC (N=149)	TAC (N=47)
FINDS JOB INTERESTING	73	86	75	92	83
FEELS TALENTS UTILIZED FAIRLY WELL OR BETTER	91	90	100	92	85
FEELS TRAINING UTILIZED FAIRLY WELL OR BETTER	91	95	100	92	89
SATISFIED WITH SENSE OF ACCOMPLISHMENT	64	81	100	82	68
PLANS TO REENLIST	73	57	50	81	83

TRAINING ANALYSIS

Training Emphasis and Task Difficulty Data

Training emphasis and task difficulty data are important sources of occupational survey information which can be used to make training programs more meaningful and relevent to the needs of personnel within a career ladder. These data provide information on training needs as perceived by experienced technicians within the specialty. With this information, comparisons can then be made between the perceived training needs and structured training programs already in existence to determine the adequacy of these programs.

Thirty-eight senior individuals provided training emphasis ratings on each task within the current job inventory. These assessments have resulted in an average rating of 3.66 with a standard deviation of 2.14. Likewise, 27 senior respondents provided the task difficulty information. These ratings, however, were then standardized so tasks of average difficulty have a rating of 5.00 and a standard deviation of 1.00. The objective of these data collection procedures is to develop ordered listings of those items which should be considered for training. These complete lists of inventory tasks either in the order of relative task difficulty or training emphasis are included in the Analysis Extract. (The Task Factor Administration section in the INTRODUCTION gives a more detailed explanation of both types of data.)

Listed in Table 25 are examples of those tasks rated highest in training emphasis. Basically, these items cover a wide variety of flight engineer functions, including computing data, balancing cargo, interfacing with the pilot or passengers, and reviewing and annotating technical orders and forms. Surprisingly, most of those tasks were rated about average to slightly below average in difficulty, while many of the tasks rated high in task difficulty received fairly low training emphasis ratings. As the table demonstrates, most items rated highest in training emphasis currently were being taught either in the ground school at Sheppard AFB TX or the flight school at Kirtland AFB NM.

TABLE 25

EXAMPLES OF TASKS RATED HIGHEST IN TRAINING EMPHASIS BY 113X0B PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		TRAINING EMPHASIS	1-48 MONTHS TAFMS PERSONNEL (N=16)	TASK DIFFICULTY
*G194	BALANCE CARGO	7.42	88	5.53
*F187	STUDY TECHNICAL ORDERS FOR ABNORMAL AND EMERGENCY INFLIGHT PROCEDURES	7.39	94	5.37
*G193	ADVISE PILOT OF WEIGHT AND BALANCE STATUS	7.39	88	4.89
*G203	COMPUTE ROUTINE TAKEOFF DATA FOR TAKE-OFF AND LANDING DATA (TOLD) CARDS	7.32	94	5.42
*F184	REVIEW AFTO FORM 781 SERIES FOR AIRCRAFT DISCREPANCIES	7.29	100	4.44
*G202	COMPUTE ROUTINE LANDING DATA FOR TAKE-OFF AND LANDING DATA (TOLD) CARDS	7.18	75	5.55
*G292	READ OFF AIRCREW CHECKLISTS	7.16	94	4.64
*F190	VISUALLY INSPECT PANELS, LOCKS, OR FASTENERS	7.11	100	3.44
**G209	DIRECT CREW MEMBERS OR PASSENGERS DURING EMERGENCY SITUATIONS	7.08	81	4.74
*G243	MAKE ENTRIES ON AFTO FORM 781 SERIES FORMS	7.08	88	4.20
**F185	SECURE EQUIPMENT FOR DESCENT OR LANDING	7.03	100	3.27
***H298	COMPUTE WEIGHT AND BALANCE DATA FOR NONSTANDARD CONFIGURATIONS	7.03	75	6.10
***G204	COMPUTE WEIGHT AND BALANCE DATA FOR STANDARD CONFIGURATIONS	7.00	100	5.60
**H297	COMPUTE REMOTE SITE OPERATIONS (RSO) DATA FOR TAKEOFF AND LANDING DATA (TOLD) CARDS	6.97	100	5.78
**G276	PERFORM AIRCREW ORSERVER OR SCANNER DUTIES	6.95	100	4.72
**G218	INSPECT CARGO FOR SECURITY	6.87	88	4.26
**G258	MONITOR ROTOR, TRANSMISSION, OR DRIVE SYSTEM OPERATIONS	6.84	88	4.76
***F154	MAINTAIN CURRENT STATUS OF FLIGHT MANUALS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	6.82	100	4.77
***H314	OPERATE HOISTING EQUIPMENT	6.76	56	5.86
***F157	OPERATE EMERGENCY ESCAPE HATCHES	6.66	69	2.93
**F148	DEMONSTRATE TO PASSENGERS THE PROPER USE OF LIFE PRESERVERS, PARACHUTES, OR OXYGEN MASKS	6.63	69	4.57
**G269	OPERATE INTERPHONES	6.63	94	3.51
***F158	OPERATE FIRE EXTINGUISHERS	6.61	69	2.99
***G251	MONITOR FUEL FLOW, CONSUMPTION, OR TRANSFER	6.61	100	4.54

* TAUGHT IN THE BASIC COURSE
** TAUGHT AT THE FLIGHT SCHOOL
*** TAUGHT IN BOTH COURSES

Specialty Training Standard (STS)

The 113X0B STS, dated April 1980, was reviewed with occupational data for 3-, 5-, and 7-skill level personnel. Subject-matter specialists at the Sheppard Technical Training Center assisted in the analysis by matching job inventory tasks to specific STS items and POI blocks. Individual paragraphs were then examined in relation to training emphasis and task difficulty ratings, as well as the percentages of individuals performing associated tasks.

Basically, items listed in the STS with tasks referenced to them were usually well supported in terms of being performed by substantial percentages of specialty incumbents. All of these areas were performed by at least ten percent of the survey respondents in their first job, first enlistment, or at the 5- and 7-skill level. There were, however, a large number of areas which require further review. For example, there were many paragraphs which had no tasks matched to them at all. This could mean that a matching simply was missed, the element was inappropriately coded as a performance item rather than a knowledge item, or that the inventory tasks appropriate to that item were unclear or omitted. Subject-matter specialists and training personnel should review these items to ensure that inclusion in the STS is appropriate. If this is the case, the possible reasons for the unreferenced elements should be pursued and necessary adjustments made. If it is determined that there are not tasks in the inventory which can be matched to a valid performance element, it is requested that subject-matter specialists draft the necessary task statements and send then to OMC for review and inclusion in the next task inventory constructed for this specialty. Table 26 provides examples of some of these items. As this table demonstrates, while many of these areas are general, and perhaps difficult to reference, others are fairly specific and should be covered in some way.

Finally, many tasks performed by at least ten percent of the sampled group members remained unreferenced to any area of the STS. As Table 27 demonstrates, these tasks covered a variety of common flight engineer duties, including common aircrew tasks, operational functions, away from home station maintenance duties, and preflight, inflight, and postflight functions. Additionally, many of these items were rated high in either training emphasis or task difficulty by specialty incumbents. All of these tasks should be reviewed and evaluated by career ladder personnel to determine if changes to the present STS are warranted to adequately cover these functions.

TABLE 26

EXAMPLES OF UNREFERENCED STS PARAGRAPHS

PARAGRAPH		CODE LEVELS 11330B	11350B	11370B
2a(2)	PREVENT SECURITY VIOLATIONS (NONTECHNICAL)	b	2b	3c
2a(3)	PREVENT SECURITY VIOLATIONS (TECHNICAL)	b	2b	3c
2a(4)	OBSERVE SECURITY PRECAUTIONS INVOLVED IN COMMUNICATIONS	b	2b	3c
5a(4)	INDOCTRINATE NEWLY ASSIGNED PERSONNEL	-	2b	4c
5a(5)	SUPERVISE EVALUATION OF AIRMAN PERFORMANCE DATA	-	2b	3c
5b(2)(d)	MONITOR EFFECTIVENESS OF CAREER KNOWLEDGE UPGRADE TRAINING	-	2b	3c
10d	INSTALL COWLING SUCH AS FAIRINGS, INSPECTION PLATES AND PANELS	2b/-	3c	4c
10e(1)	INSPECT AIRFRAME INSTALLED CARGO HANDLING EQUIPMENT	2b/-	3c	3c
22c(3)	BRIEF PERSONNEL ON AIRCRAFT EMERGENCY EQUIPMENT- "V" BLADE KNIFE	2b/-	3c	4d

TABLE 27

TECHNICAL TASKS UNREFERENCED TO STS 113X0B WITH GREATER THAN TEN PERCENT PERFORMING

TASKS		TRAINING* EMPHASIS	PERCENT 113X0B PERSONNEL PERFORMING (N=231)	TASK** DIFFICULTY
PERFORMING COMMON AIRCREW TASKS				
F177	PERFORM PERSONAL EQUIPMENT INSPECTION	6.47	88	3.89
F159	OPERATE FLIGHTLINE MOTORVEHICLES	3.45	65	3.31
F173	PERFORM FLIGHT TEST FOR NEW EQUIPMENT VALIDATION	2.66	36	6.36
F174	PERFORM FLIGHT TEST FOR NEW FLIGHT PROCEDURES	2.45	29	6.44
F175	PERFORM HIGH ALTITUDE PROCEDURES IN ALTITUDE CHAMBER	2.05	39	5.01
F160	OPERATE GALLEY EQUIPMENT, SUCH AS OVENS OR COFFEE MAKERS	1.08	12	2.91
PERFORMING PREFLIGHT, INFLIGHT, AND POSTFLIGHT FUNCTIONS				
G276	PERFORM AIRCREW OBSERVER OR SCANNER DUTIES	6.95	91	4.72
G195	BRIEF PILOT OR CREW ON PREMISSION STATUS OF AIRCRAFT	6.45	75	4.62
G291	PRACTICE OR PERFORM DITCHING PROCEDURES	5.39	43	4.50
G279	PERFORM FUNCTIONAL CHECK FLIGHT (FCF) DUTIES	4.76	68	6.86
G288	PERFORM PREFLIGHT SFCS OPERATIONAL CHECKS	3.37	11	5.63
G278	PERFORM FUEL SYSTEM OPERATION COLD WEATHER ADJUSTMENTS	3.34	19	4.70
G280	PERFORM INFLIGHT AFCS ADJUSTMENTS	2.95	20	6.48
G273	OPERATE RADAR	2.21	13	6.30

*AVERAGE TRAINING EMPHASIS IS 3.66 WITH A STANDARD DEVIATION OF 2.14
**AVERAGE TASK DIFFICULTY IS 5.00 WITH A STANDARD DEVIATION OF 1.00

TABLE 27 (CONTINUED)

TECHNICAL TASKS UNREFERENCED TO STS 113X0B WITH GREATER THAN TEN PERCENT PERFORMING

TASKS		TRAINING* EMPHASIS	PERCENT 113X0B PERSONNEL PERFORMING (N=231)	TASK** DIFFICULTY
PERFORMING OPERATIONAL FUNCTIONS				
H325	PERFORM INFLIGHT LEAK CHECKS	6.55	71	4.06
H300	DEPLOY PYROTECHNICS	6.11	75	5.16
H305	INSPECT AMMUNITION OR PYROTECHNICS	5.95	69	5.15
H344	RECONFIGURE AIRCRAFT FOR SPECIAL MISSIONS OR AUGMENTATION	5.95	74	5.48
H330	PERFORM OR SIMULATE SEARCH AND RESCUE (SAR) PROCEDURES	5.89	75	5.97
H337	PERFORM SIMULATED COMBAT MANUEVERS	5.45	64	6.42
H326	PERFORM INSERTION OR EXTRACTION OPERATION DUTIES	5.26	53	5.61
H311	LOAD OR OFFLOAD PYROTECHNICS	5.24	69	4.43
H331	PERFORM PARADROP PROCEDURES	5.08	60	5.69
H302	FASTEN OR RELEASE CARGO NETS ON SLINGS	5.03	55	4.79
H341	PERFORM WEAPONS SYSTEMS OPERATOR MAINTENANCE	4.37	36	6.57
H329	PERFORM NIGHT VISION GOGGLE OPERATIONS	3.92	26	7.29
H320	PERFORM CARGO SLING OPERATOR MAINTENANCE	3.82	25	4.92
H324	PERFORM HOT REFUELING OPERATION DUTIES	3.76	22	5.57
H315	OPERATE HOVER COUPLER OR TRIM CONTROL SYSTEMS	3.60	21	5.80
H317	OPERATE INFRARED COUNTERMEASURE EQUIPMENT	3.53	26	5.86
H316	OPERATE INFLIGHT TRACKING EQUIPMENT	3.42	34	6.14
H323	PERFORM HOISTING EQUIPMENT OPERATIONAL MAINTENANCE	3.34	20	5.20
H336	PERFORM SHIP PICKUP PROCEDURES	3.32	21	6.70
H339	PERFORM STATIC LINE OR HIGH ALTITUDE LOW OPENING (HALO) PARADROP PROCEDURES	3.10	33	5.85
H333	PERFORM RAPELLING PROCEDURES	2.97	14	5.32
H335	PERFORM SHIP LANDING PROCEDURES	2.97	10	5.92
H334	PERFORM ROPE LADDER OPERATION DUTIES	2.66	13	6.36
H338	PERFORM STABO RIG PROCEDURES	2.55	13	6.10

* AVERAGE TRAINING EMPHASIS IS 3.66 WITH A STANDARD DEVIATION OF 2.14
** AVERAGE TASK DIFFICULTY IS 5.00 WITH A STANDARD DEVIATION OF 1.00

TABLE 27 (CONTINUED)

TECHNICAL TASKS UNREFERENCED TO STS 113X0B WITH GREATER THAN TEN PERCENT PERFORMING

TASKS		TRAINING* EMPHASIS	PERCENT 113X0B PERSONNEL PERFORMING (N=231)	TASK** DIFFICULTY
PERFORMING HELICOPTER MAINTENANCE DUTIES (AWAY FROM HOME STATION)				
I353	OPERATE AGE	4.92	59	4.87
I356	PERFORM AIRCRAFT PRE- OR POST-TRANSFER INSPECTIONS	4.45	33	5.45
I370	REMOVE OR REPLACE COCKPIT INSTRUMENTS OR INSTRUMENT INDICATORS	3.90	35	4.60
I372	REMOVE OR REPLACE STRUCTURAL, BOLTS, FASTENERS, OR SCREWS	3.63	32	4.38
I358	PERFORM GROUND ENGINE CONTROL ADJUSTMENTS	3.24	17	5.66
I345	ADJUST FUEL DENSITY SETTINGS	2.90	18	5.38
I349	INSPECT AGE FOR SERVICEABILITY	2.87	36	4.26
I350	INSPECT SPECIALIZED SUPPORT EQUIPMENT OTHER THAN AGE FOR SERVICEABILITY	2.79	23	4.26
I346	CLEAN OR REPLACE FUEL SYSTEM FILTERS OR PURIFIERS	2.76	11	5.55
I348	DRAIN FUEL SUMPS	2.63	23	4.31
I364	PERFORM MAINTENANCE SPECIAL INSPECTIONS	2.45	23	5.83
I368	REMOVE OR REPLACE AIRFRAME TUBING OR HOSES	2.45	15	4.81
I382	WASH AND RUSTPROOF ENGINES	2.32	25	5.01
I347	DEFUEL AIRCRAFT	1.95	10	5.08
I369	REMOVE OR REPLACE BATTERIES	1.66	10	4.42
I354	PATCH ROTOR BLADE POCKETS	1.61	10	6.03
MISCELLANEOUS				
B31	DIRECT INFLIGHT INSPECTIONS OF AIRCRAFT	4.21	55	5.60
C63	EVALUATE DISCREPANCIES REPORTED BY CREW MEMBERS	3.63	39	5.53
C74	EVALUATE RESCUE AND RECOVERY OPERATIONS	3.24	32	6.60
D116	MAINTAIN TRAINING EQUIPMENT	2.26	24	5.13
C61	EVALUATE COMPLIANCE WITH AIRCRAFT OPERATION OR MOVEMENT REGULATIONS	2.05	25	5.63
D97	CONDUCT TACTICAL TRAINING	1.82	28	6.33
E128	COORDINATE ENROUTE BASE SUPPORT	1.32	18	5.75
E140	PREPARE REQUISITIONS FOR AIRCRAFT PARTS OR EQUIPMENT	1.21	10	4.92
E129	INITIATE AIRCRAFT INCIDENT REPORT FORMS (MAC FORM 97)	1.16	10	5.26
B27	COORDINATE FLIGHT OPERATIONS WITH RAMP COORDINATORS	1.03	10	5.36

* AVERAGE TRAINING EMPHASIS IS 3.66 WITH A STANDARD DEVIATION OF 2.14
** AVERAGE TASK DIFFICLUTY IS 5.00 WITH A STANDARD DEVIATION OF 1.00

Plan of Instruction (POI 3ABR11330B)

The current Plan of Instruction for Course J3ABR11330B (dated October 1980) was also examined. Although some of the tasks referenced to areas of the POI dealing with technical publications and AFTO Form 781 documentation were performed by relatively small percentages of the first-enlistment members sampled, as a whole, the POI blocks were supported by survey data. Training emphasis ratings and the percentages of incumbents performing tasks referenced to specific areas of the document were characteristically very high. There were, however, a large number of tasks performed by at least 30 percent of the first-term respondents and rated above average in training emphasis which were not referenced to any block. As Table 28 shows, these tasks related to three main duty areas: performing common aircrew tasks; performing preflight, inflight, and postflight functions; and performing operational functions. With the exception of many of the operational tasks which tended to be mission specific, most of these items presently are being covered in the flight school which is held at Kirtland AFB NM. As a result, it appears that formal training time has, in fact, been allotted to these tasks, consistent with the high training emphasis ratings. A degree of overlap, however, apparently also exists between the subject-matter addressed in the basic course (ground school) and the follow-on flight school. While discussions with career ladder personnel indicate this may be due, in part, to the fact that a substantial amount of time often passes between the completion of one training program and entry into the next, both courses should be examined in depth to determine if such overlap is warranted and cost-effective.

TABLE 28

TASKS UNREFERENCED TO POI 3ABR11330B RATED ABOVE AVERAGE IN TRAINING EMPHASIS

TASKS		TRAINING* EMPHASIS	1-48 MOS TAFMS PERSONNEL PERFORMING (N=16)	11350B PERSONNEL PERFORMING (N=104)	TASK** DIFFICULTY
PERFORMING COMMON AIRCREW TASKS					
F185	SECURE EQUIPMENT FOR DESCENT OR LANDING	7.03	100	98	3.27
F154	MAINTAIN CURRENT STATUS OF FLIGHT MANUALS, SAFETY, AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	6.82	100	90	4.77
F148	DEMONSTRATE TO PASSENGERS THE PROPER USE OF LIFE PRESERVERS, PARACHUTES, OR OXYGEN MASKS	6.63	69	67	4.57
F158	OPERATE FIRE EXTINGUISHERS	6.61	69	70	2.99
F183	POST CHANGES TO PERSONAL AIRCREW PUBLICATIONS	6.61	75	88	3.68
F176	PERFORM OR PRACTICE EMERGENCY AIRCRAFT EGRESS PROCEDURES	6.50	81	87	4.09
F177	PERFORM PERSONAL EQUIPMENT INSPECTION	6.47	94	87	3.89
F167	PARTICIPATE IN GENERAL OR SPECIALIZED MISSION BRIEFINGS	6.34	100	89	4.35
F166	PARTICIPATE IN CREW OPERATION DEBRIEFINGS	6.24	94	89	3.95
F155	MONITOR RADIO COMMUNICATION TRANSMISSIONS	6.13	94	91	4.57
F165	PARTICIPATE IN CREW MAINTENANCE DEBRIEFINGS	6.05	63	80	3.83
PERFORMING PREFLIGHT, INFLIGHT, AND POSTFLIGHT FUNCTIONS					
G276	PERFORM AIRCREW OBSERVER OR SCANNER DUTIES	6.95	100	89	4.72
G218	INSPECT CARGO FOR SECURITY	6.87	88	89	4.26
G269	OPERATE INTERPHONES	6.63	94	86	3.51
G195	BRIEF PILOT OR CREW ON PREMISSION STATUS OF AIRCRAFT	6.45	88	71	4.62
G231	INSPECT LG TIRES	6.18	63	56	4.05
G241	LOAD OR OFFLOAD CARGO WITHOUT USING CARGO SLING	6.16	75	82	4.87
G242	LOAD OR OFFLOAD PERSONNEL	6.16	81	89	3.95
G230	INSPECT LANDING GEAR (LG) POSITION INDICATING SYSTEMS	5.97	63	56	4.12
G257	MONITOR POWER PLANT ANTI-ICING SYSTEM OPERATIONS	5.95	63	64	4.43

TABLE 28 (CONTINUED)

TASKS UNREFERENCED TO POI 3ABR11330B RATED ABOVE AVERAGE IN TRAINING EMPHASIS

TASKS		TRAINING* EMPHASIS	1-48 MOS TAFMS PERSONNEL PERFORMING (N=16)	11350B PERSONNEL PERFORMING N=104)	TASK** DIFFICULTY
PERFORMING OPERATIONAL FUNCTIONS					
H325	PERFORM INFLIGHT LEAK CHECKS	6.55	69	63	4.06
H300	DEPLOY PYROTECHNICS	6.11	69	75	5.16
H303	FIRE WEAPONS SYSTEMS	6.11	38	50	5.84
H305	INSPECT AMMUNITION OR PYROTECHNICS	5.95	50	65	5.15
H344	RECONFIGURE AIRCRAFT FOR SPECIAL MISSIONS OR AUGMENTATION	5.95	56	70	5.48
H330	PERFORM OR SIMULATE SEARCH AND RESCUE (SAR) PROCEDURES	5.89	75	72	5.97

*AVERAGE TRAINING EMPHASIS IS 3.66 WITH A STANDARD DEVIATION OF 2.14
**AVERAGE TASK DIFFICULTY IS 5.00 WITH A STANDARD DEVIATION OF 1.00

ANALYSIS OF WRITE-IN COMMENTS

At the end of each survey booklet, each survey respondent is encouraged to write in any additional comments relevent to current career ladder issues, individual opinions, or additional information not covered by the task inventory. Although a number of write-ins were received, most dealt with additional courses completed or additional tasks performed which were not included in the inventory. As expected, in light of the highly positive job satisfaction indices, very few of them exibited any great dissatisfaction with the present state of the career ladder as a whole. Of the few negative comments received, however, some noted that flight engineers sometimes were required to perform extraneous tasks, such as raking leaves, cleaning offices, and picking up around outside areas. Additionally, a couple of the remaining write-ins expressed the opinion that flight engineers should be required to have some type of helicopter maintenance experience.

IMPLICATIONS

Occupational survey results have indicated a very large amount of overlap between the tasks performed by 113X0B personnel regardless of many background differences such as relative experience levels, skill level, and major command. While there is a large core of commonly performed functions, most of the major differences found among the jobs of people in this field are a result of the type of mission flown and the subsequent diversity of operational tasks involved, or the expansion of job responsibilities resulting from additional supervisory and training duties acquired with seniority.

As a whole, job satisfaction is extremely high in the specialty, with the majority of individuals in all TAFMS groups reporting that they found their job interesting and that their talents and training were being utilized well.

And finally, examination of career ladder documents revealed that the AFR 39-1 Specialty Descriptions were supported by survey information. The majority of the STS was supported by survey data, but some items of the STS had no tasks referenced to them and many tasks performed by more than 10 percent of the sample group members had not been referenced to any area of the STS. The current POI blocks were supported by survey data. However, there was a large number of tasks performed by more than 30 percent of the first-term respondents, and rated above average in training emphasis, that had not been referenced to any POI block.